

This Book is
of W. E. Saxe

THE LUMBERMAN'S

INDEX

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Alan O'Bright

*Turn the crank and there you are,
Or a twist of the wrist does the business.
Greatest Value with Least Cost.*

HOW TO CATCH ON.

Place the book on your desk or whatever support you choose, face up; lay your left wrist upon it with the fingers extending over the top end and with them lift the entire book, the back or right hand cover remaining down, then slide your hand down and under the edge of the left hand cover, place the point of your thumb on the number or letter in the index you want, throw the balance of the book towards the right, and there you are. It is like resting in a hammock by the brook, you can't help it.

THE COST.

*In Canvas, - - - One Dollar.
In Leather, - - - One Fifty. -*

YOU HAVE THE CHOICE.

Ausgezeichnet.

A LUMBERMAN'S DREAM REALIZED,
OF A POEM IN FIGURES,
COMBINED WITH
"THE AMBIDEXTER"

By JOE W. WOODWARD, Omaha, Neb.

The lumberman's dream, oh the lumberman's dream;
Like the musical voice of the swift running stream,
It dwells in your memory, fresh from the pen
Of its author, and flits through your fancy again.
Get the book and save time, and then cast a gleam
Of futurity bright o'er the lumberman's dream.

To appreciate the book read the introduction and suggestions on front and back pages. First catch on and buy the book—then you will not be compelled to daily, hourly and always



SWEAT YOUR WAY THROUGH.

"Time saved is money saved,"

An adage old but true,
This book, correct in each detail
Will bring both these to you;

"There's many a slip 'twixt the cup and the lip,"
Mistakes make enemies;
So get the book and realize
The truthfulness of these.

Ole, mae tank ae yump mae yob!

INTRODUCTION.

The "Patent" has no reference whatever to the subject matter of this little book, which is merely a compilation of figures, or if you will, a mathematical feat, the result of persistent perseverance and application.

We have gone over the figures times without number and feel assured they are right and for your aid and convenience, in fact, barring fractions and typographical errors totals are correct.

The Patent is on the principle or mechanical application of the book, applicable to all indexes or references used by bookkeepers, accountants or tally men of all descriptions in their numerous and varied duties, where indexed data is required as a means of saving time, labor and turmoil.

Ambidextrous, or as ready to the left as to the right hand, is in this case not literal but in fact.

Place the book on your desk, tally board, or bench, face up, lay your left wrist upon it with the fingers extending over the top end and with them lift the entire book, the back or right hand cover remaining down, then slide your hand down and under the edge of the left hand cover, place the point of your left thumb on the number or letter in the index you want, throw the balance of the book towards the right and there you are, where you are at.

A simple repetition of this movement describes the utility of the book, and you are able to retain the pen or pencil, as the case may be, in your right hand ready for use, in place of being compelled to thrust them in your mouth, behind your ear or lay them carefully on the desk while you hunt with your right hand for the index wanted, in the old form of left to right indexes.

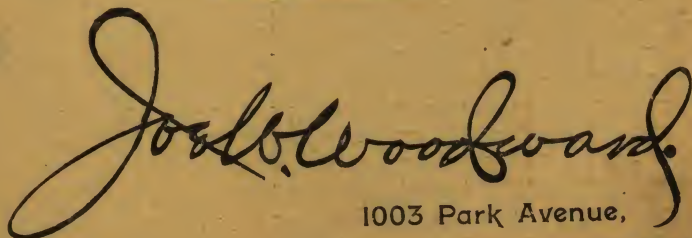
You will notice the size and form of this book as well as its durable construction, make it suitable for the pocket, the loading dock, the yard, the car, or the office, for rain as well as sunshine; it will always make you happy.

The arrangement of the figures and the ruling speak for themselves. Please scrutinize the book and if you think it will prove of use to you as above mentioned, where any bright boy who can count correctly can use it, giving totals, leaving the footings only to be verified by you, remit us by P. O. Money Order or express at your expense.

"Minutes saved" means money in bank,
And 'twixt you and me to be really frank
You'll buy the book as a great time saver,
Besides doing me an especial favor;
Bound in cloth and red, one dollar's the cost,
Or, a half dollar more if in leather, embossed,
I've done the work, now you do the rest,
And prove our joint efforts the very best.

If, however, you fail to recognize its utility, return the book in its original wrapper at no expense to you and we will remain, with thanks in advance,

Yours to command,



1003 Park Avenue,

OMAHA.

	10	12	14	16	18	20		10	12	14	16	18	20
1	10	12	14	16	18	20	51	510	612	714	816	918	1020
2	20	24	28	32	36	40	52	520	624	728	832	936	1040
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4	40	48	56	64	72	80	54	540	648	756	864	972	1080
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14	140	168	196	224	252	280	64	640	768	896	1024	1152	1280
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23	230	276	322	368	414	460	73	730	876	1022	1168	1314	1460
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25	250	300	350	400	450	500	75	750	900	1050	1200	1350	1500
26	260	312	364	416	468	520	76	760	912	1064	1216	1368	1520
27	270	324	378	432	486	540	77	770	924	1078	1232	1386	1540
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43	430	516	602	688	774	860	93	930	1116	1302	1488	1674	1860
44	440	528	616	704	792	880	94	940	1128	1316	1504	1692	1880
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46	460	552	644	736	828	920	96	960	1152	1344	1536	1728	1920
47	470	564	658	752	846	940	97	970	1164	1358	1552	1746	1940
48	480	576	672	768	864	960	98	980	1176	1372	1568	1764	1960
49	490	588	686	784	882	980	99	990	1188	1386	1584	1782	1980
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200	2000	2400	2800	3200	3600	4000	700	7000	8400	9800	11200	12600	14000
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400	4000	4800	5600	6400	7200	8000	900	9000	10800	12600	14400	16200	18000
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17½	21 11	26 3	30 8	35	39 5	43 9	42½	53	64	75	85	96	106
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23	29	35	40	46	51	58	48	60	72	84	96	108	120
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$3\frac{1}{2}$	3 8	4 5	5 1	5 10	6 7	7 4	$28\frac{1}{2}$	30	36	42	48	53	59
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$5\frac{1}{2}$	5 9	6 11	8	9 2	10 4	11 6	$30\frac{1}{2}$	32	38	44	51	57	64
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$6\frac{1}{2}$	6 9	8 2	9 6	10 10	12 2	13 7	$31\frac{1}{2}$	33	39	46	53	59	66
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$7\frac{1}{2}$	7 10	9 5	10 11	12 6	14 1	15 8	$32\frac{1}{2}$	34	41	47	54	61	68
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$8\frac{1}{2}$	8 10	10 8	12 5	14 2	15 11	17 9	$33\frac{1}{2}$	35	42	49	56	63	70
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$11\frac{1}{2}$	12	14 5	16 9	19 2	21 7	24	$36\frac{1}{2}$	38	46	53	61	68	76
12	12 6	15	17 6	20	22 6	25	37	39	46	54	62	69	77
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$14\frac{1}{2}$	15 1	18 2	21 2	24 2	27 2	30 3	$39\frac{1}{2}$	41	49	58	66	74	82
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$15\frac{1}{2}$	16 2	19 5	22 7	25 10	29 1	32 4	$40\frac{1}{2}$	42	51	59	68	76	84
16	16 8	20	23 4	26 8	30	33 4	41	43	51	60	68	77	85
$16\frac{1}{2}$	17 2	20 8	24 1	27 6	30 11	34 5	$41\frac{1}{2}$	43	52	61	69	78	86
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18	18 9	22 6	26 3	30	33 9	37 6	43	45	54	63	72	81	90
$18\frac{1}{2}$	19 3	23 2	27	30 10	34 8	38 7	$43\frac{1}{2}$	45	54	63	73	82	91
19	19 10	23 9	27 9	31 8	35 8	39 7	44	46	55	64	73	83	92
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20	20 10	25	29 2	33 4	37 6	41 8	45	47	56	66	75	84	94
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21	22	26	31	35	39	44	46	48	58	67	77	86	96
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22	23	28	32	37	41	46	47	49	59	69	78	88	98
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23	24	29	34	38	43	48	48	50	60	70	80	90	100
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24	25	30	35	40	45	50	49	51	61	71	82	92	102
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25	26	31	36	42	47	52	50	52	63	73	83	94	104
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300	313	375	438	500	563	625	800	833	1000	1167	1333	1500	1667
400	417	500	583	667	750	833	900	938	1125	1313	1500	1688	1875
500	521	625	729	833	938	1042	1000	1041	1250	1458	1666	1875	2083

14 in.

1 in.

Batts

14 in.

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6	5	6	7	8	9	10	31	26	31	36	41	47	52
$6\frac{1}{2}$	5 5	6 6	7 7	8 8	9 9	10 10	$31\frac{1}{2}$	26	32	37	42	47	53
7	5 10	7	8 2	9 4	10 6	11 8	32	27	32	37	43	49	53
$7\frac{1}{2}$	6 3	7 6	8 9	10	11 3	12 6	$32\frac{1}{2}$	27	33	38	43	49	54
8	6 8	8	9 4	10 8	12	13 4	33	28	33	39	41	50	55
$8\frac{1}{2}$	7 1	8 6	9 11	11 4	12 9	14 2	$33\frac{1}{2}$	28	34	39	45	50	56
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$9\frac{1}{2}$	7 11	9 6	11 1	12 8	14 3	15 10	$34\frac{1}{2}$	29	35	40	46	52	58
10	8 4	10	11 8	13 4	15	16 8	35	29	35	41	47	53	58
$10\frac{1}{2}$	8 9	10 6	12 3	14	15 9	17 6	$35\frac{1}{2}$	30	36	41	47	53	59
11	9 2	11	12 10	14 8	16 6	18 4	36	30	36	42	48	54	60
$11\frac{1}{2}$	9 7	11 6	13 5	15 4	17 3	19 2	$36\frac{1}{2}$	30	37	43	49	55	61
12	10	12	14	16	18	20	37	31	37	43	49	56	62
$12\frac{1}{2}$	10 5	12 6	14 7	16 8	18 9	20 10	$37\frac{1}{2}$	31	38	44	50	56	63
13	10 10	13	15 2	17 4	19 6	21 8	38	32	38	44	51	57	63
$13\frac{1}{2}$	11 3	13 4	15 9	18	20 3	22 6	$38\frac{1}{2}$	32	39	45	51	58	64
14	11 8	14	16 4	18 8	21	23 4	39	33	39	46	52	59	65
$14\frac{1}{2}$	12 1	14 6	16 11	19 4	21 9	24 2	$39\frac{1}{2}$	33	40	46	53	59	66
15	12 6	15	17 6	20	22 6	25	40	33	40	47	53	60	67
$15\frac{1}{2}$	12 11	15 6	18 1	20 8	23 3	25 10	$40\frac{1}{2}$	34	41	47	54	61	68
16	13 4	16	18 8	21 4	24	26 8	41	34	41	48	55	62	68
$16\frac{1}{2}$	13 9	16 6	19 3	22	24 9	27 6	$41\frac{1}{2}$	35	42	48	55	62	69
17	14 2	17	19 10	22 8	25 6	28 4	42	35	42	49	56	63	70
$17\frac{1}{2}$	14 7	17 6	20 5	23 4	26 3	29 2	$42\frac{1}{2}$	35	43	50	57	64	71
18	15	18	21	24	27	30	43	36	43	50	57	65	72
$18\frac{1}{2}$	15 5	18 6	21 7	24 8	27 9	30 10	$43\frac{1}{2}$	36	44	51	58	65	73
19	15 10	19	22 2	25 4	28 6	31 8	44	37	44	51	59	66	73
$19\frac{1}{2}$	16 3	19 6	22 9	26	29 3	32 6	$44\frac{1}{2}$	37	45	52	59	67	74
20	16 8	20	23 4	26 8	30	33 4	45	38	45	53	60	68	75
$20\frac{1}{2}$	17	21	24	27	31	34	$45\frac{1}{2}$	38	46	53	61	68	76
21	18	21	25	28	32	35	46	38	46	54	61	69	77
$21\frac{1}{2}$	18	22	25	29	32	36	$46\frac{1}{2}$	39	47	54	62	70	78
22	18	22	26	29	33	37	47	39	47	55	63	71	78
$22\frac{1}{2}$	19	23	26	30	34	38	$47\frac{1}{2}$	40	48	55	63	71	79
23	19	23	27	31	35	38	48	40	48	56	64	72	80
$23\frac{1}{2}$	20	24	27	31	35	39	$48\frac{1}{2}$	40	49	57	65	73	81
24	20	24	28	32	36	40	49	41	49	57	65	74	82
$24\frac{1}{2}$	20	25	29	33	37	41	$49\frac{1}{2}$	41	50	58	66	74	83
25	21	25	29	33	38	42	50	42	50	58	67	75	83
100	83	100	117	133	150	167	600	500	600	700	800	900	1000
200	167	200	233	267	300	333	700	583	700	817	933	1050	1167
300	250	300	350	400	450	500	800	667	800	933	1067	1200	1333
400	333	400	467	533	600	667	900	750	900	1050	1200	1350	1500
500	417	500	583	667	750	833	1000	833	1000	1166	1333	1500	1666

	10	12	14	16	18	20		10	12	14	16	18	20
1	181 $\frac{1}{3}$	22	25 $\frac{1}{3}$	29 $\frac{1}{3}$	33	36 $\frac{1}{3}$	51	935	1122	1309	1496	1683	1870
2	37	44	51	59	66	73	52	953	1144	1335	1525	1716	1907
3	55	66	77	88	99	110	53	972	1166	1360	1555	1749	1943
4	73	88	103	117	132	147	54	990	1188	1386	1584	1782	1980
5	92	110	128	147	165	183	55	1008	1210	1412	1613	1815	2017
6	110	132	154	176	198	220	56	1027	1232	1437	1643	1848	2053
7	128	154	180	205	231	257	57	1045	1254	1463	1672	1881	2090
8	147	176	205	235	264	293	58	1063	1276	1489	1701	1914	2127
9	165	198	231	264	297	330	59	1082	1298	1514	1731	1947	2163
10	183	220	257	293	330	367	60	1100	1320	1540	1760	1980	2200
11	202	242	282	323	363	403	61	1118	1342	1566	1789	2013	2237
12	220	264	308	352	396	440	62	1137	1364	1591	1819	2046	2273
13	238	286	334	381	429	477	63	1155	1386	1617	1848	2079	2310
14	257	308	359	411	462	513	64	1173	1408	1643	1877	2112	2347
15	275	330	385	440	495	550	65	1192	1430	1668	1907	2145	2383
16	293	352	411	469	528	587	66	1210	1452	1694	1936	2178	2420
17	312	374	436	499	561	623	67	1228	1474	1720	1965	2211	2457
18	330	396	462	528	594	660	68	1247	1496	1745	1995	2244	2493
19	348	418	488	557	627	697	69	1265	1518	1771	2024	2277	2530
20	367	440	513	587	660	733	70	1283	1540	1797	2053	2310	2567
21	385	462	539	616	693	770	71	1302	1562	1822	2083	2343	2603
22	403	484	565	645	726	807	72	1320	1584	1848	2112	2376	2640
23	422	506	590	675	759	843	73	1338	1606	1874	2141	2409	2677
24	440	528	616	704	792	880	74	1357	1628	1899	2171	2442	2713
25	458	550	642	733	825	917	75	1375	1650	1925	2200	2475	2750
26	477	572	667	763	858	953	76	1393	1672	1951	2229	2508	2787
27	495	594	693	792	891	990	77	1412	1694	1976	2259	2541	2823
28	513	616	719	821	924	1027	78	1430	1716	2002	2288	2574	2860
29	532	638	744	851	957	1063	79	1448	1738	2028	2317	2607	2897
30	550	660	770	880	990	1100	80	1467	1760	2053	2347	2640	2933
31	568	682	796	909	1023	1137	81	1485	1782	2079	2376	2673	2970
32	587	704	821	939	1056	1173	82	1503	1804	2105	2405	2706	3007
33	605	726	847	968	1089	1210	83	1522	1826	2130	2435	2739	3043
34	623	748	873	997	1122	1247	84	1540	1848	2156	2464	2772	3080
35	642	770	898	1027	1155	1283	85	1558	1870	2182	2493	2805	3117
36	660	792	924	1056	1188	1320	86	1577	1892	2207	2523	2838	3153
37	678	814	950	1085	1221	1357	87	1595	1914	2233	2552	2871	3190
38	697	836	975	1115	1254	1393	88	1613	1936	2259	2581	2904	3227
39	715	858	1001	1144	1287	1430	89	1632	1958	2284	2611	2937	3263
40	733	880	1027	1173	1320	1467	90	1650	1980	2310	2640	2970	3300
41	752	902	1052	1203	1353	1503	91	1668	2002	2336	2669	3003	3337
42	770	924	1078	1232	1386	1540	92	1687	2024	2361	2699	3036	3373
43	788	946	1104	1261	1419	1577	93	1705	2046	2387	2728	3069	3410
44	807	968	1129	1291	1452	1613	94	1723	2068	2413	2757	3102	3447
45	825	990	1155	1320	1485	1650	95	1742	2090	2438	2787	3135	3483
46	843	1012	1181	1349	1518	1687	96	1760	2112	2464	2816	3168	3520
47	862	1034	1206	1379	1551	1723	97	1778	2134	2490	2845	3201	3557
48	880	1056	1232	1408	1584	1760	98	1797	2156	2515	2875	3234	3593
49	898	1078	1258	1437	1617	1797	99	1815	2178	2541	2904	3267	3630
50	917	1100	1283	1467	1650	1833	100	1833	2200	2567	2933	3300	3667
200	3667	4400	5133	5867	6600	7333	700	12833	15400	17967	20533	23100	25667
300	5500	6600	7700	8800	9900	11000	800	14667	17600	20533	23467	26400	29333
400	7333	8800	10267	11733	13200	14667	900	16500	19800	23100	26400	29700	33000
500	9167	11000	12833	14667	16500	18333	1000	18333	22000	25666	29333	33000	36666
600	11000	13200	15400	17600	19800	22000	2000	36667	44000	51333	58667	66000	73333

1 x 22

1 x 14

1 $\frac{1}{2}$ in.

1 in.

Ratts

1 $\frac{1}{2}$ in.

	10	12	14	16	18	20		10	12	14	16	18	20
1	11 $\frac{1}{2}$	14	16 $\frac{1}{2}$	18 $\frac{1}{2}$	21	23 $\frac{1}{2}$	51	595	714	833	952	1071	1190
2	23	28	33	37	42	47	52	607	728	849	971	1092	1213
3	35	42	49	56	63	70	53	618	742	866	989	1113	1237
4	47	56	65	75	84	93	54	630	756	882	1008	1134	1260
5	58	70	82	93	105	117	55	642	770	898	1027	1155	1283
6	70	84	98	112	126	140	56	653	784	915	1045	1176	1307
7	82	98	114	131	147	163	57	665	798	931	1064	1197	1330
8	93	112	131	149	168	187	58	677	812	947	1083	1218	1353
9	105	126	147	168	189	210	59	688	826	964	1101	1239	1377
10	117	140	163	187	210	233	60	700	840	980	1120	1260	1400
11	128	154	180	205	231	257	61	712	854	996	1139	1281	1423
12	140	168	196	224	252	280	62	723	868	1013	1157	1302	1447
13	152	182	212	243	273	303	63	735	882	1029	1176	1323	1470
14	163	196	229	261	294	327	64	747	896	1045	1195	1344	1493
15	175	210	245	280	315	350	65	758	910	1062	1213	1365	1517
16	187	224	261	299	336	373	66	770	924	1078	1232	1386	1540
17	198	238	278	317	357	397	67	782	938	1094	1251	1407	1563
18	210	252	294	336	378	420	68	793	952	1111	1269	1428	1587
19	222	266	310	355	399	443	69	805	966	1127	1288	1449	1610
20	233	280	327	373	420	467	70	817	980	1143	1307	1470	1633
21	245	294	343	392	441	490	71	828	994	1160	1325	1491	1657
22	257	308	359	411	462	513	72	840	1008	1176	1344	1512	1680
23	268	322	376	429	483	537	73	852	1022	1192	1363	1533	1703
24	280	336	392	448	504	560	74	863	1036	1209	1381	1554	1727
25	292	350	408	467	525	583	75	875	1050	1225	1400	1575	1750
26	303	364	425	485	546	607	76	887	1064	1241	1419	1596	1773
27	315	378	441	504	567	630	77	898	1078	1258	1437	1617	1797
28	327	392	457	523	588	653	78	910	1092	1274	1456	1638	1820
29	338	406	474	541	609	677	79	922	1106	1290	1475	1659	1843
30	350	420	490	560	630	700	80	933	1120	1307	1493	1680	1867
31	362	434	506	579	651	723	81	945	1134	1323	1512	1701	1890
32	373	448	523	597	672	747	82	957	1148	1339	1531	1722	1913
33	385	462	539	616	693	770	83	968	1162	1356	1549	1743	1937
34	397	476	555	635	714	793	84	980	1176	1372	1568	1764	1960
35	408	490	572	653	735	817	85	992	1190	1388	1587	1785	1983
36	420	504	588	672	756	840	86	1003	1204	1405	1605	1806	2007
37	432	518	604	691	777	863	87	1015	1218	1421	1624	1827	2030
38	443	532	621	709	798	887	88	1027	1232	1437	1643	1848	2053
39	455	546	637	728	819	910	89	1038	1246	1454	1661	1869	2077
40	467	560	653	747	840	933	90	1050	1260	1470	1680	1890	2100
41	478	574	670	765	861	957	91	1062	1274	1486	1699	1911	2123
42	490	588	686	784	882	980	92	1073	1288	1503	1717	1932	2147
43	502	602	702	803	903	1003	93	1085	1302	1519	1736	1953	2170
44	513	616	719	821	924	1027	94	1097	1316	1535	1755	1974	2193
45	525	630	735	840	945	1050	95	1108	1330	1552	1773	1995	2217
46	537	644	751	859	966	1073	96	1120	1344	1568	1792	2016	2240
47	548	658	768	877	987	1097	97	1132	1358	1584	1811	2037	2263
48	560	672	784	896	1008	1120	98	1143	1372	1601	1829	2058	2287
49	572	686	800	915	1029	1143	99	1155	1386	1617	1848	2079	2310
50	583	700	817	933	1050	1167	100	1167	1400	1633	1867	2100	2333
200	2333	2800	3267	3733	4200	4667	700	8167	9800	11433	13067	14700	16333
300	3500	4200	4900	5600	6300	7000	800	9333	11200	13067	14933	16800	18667
400	4667	5600	6533	7467	8400	9333	900	10500	12600	14700	16800	18900	21000
500	5833	7000	8167	9333	10500	11667	1000	11666	14000	16333	18666	21000	23333
600	7000	8400	9800	11200	12600	14000	2000	23333	28000	32667	37333	42000	46667

	10	12	14	16	18	20		10	12	14	16	18	20
1	8 1/4	10	11 1/4	13 1/4	15	16 3/4	51	425	510	595	680	765	850
2	17	20	23	25	30	33	52	433	520	607	693	780	867
3	25	30	35	40	45	50	53	442	530	618	707	795	883
4	33	40	47	53	60	67	54	450	540	630	720	810	900
5	42	50	58	67	75	83	55	458	550	642	733	825	917
6	50	60	70	80	90	100	56	467	560	653	747	840	933
7	58	70	82	93	105	117	57	475	570	665	760	855	950
8	67	80	93	107	120	133	58	483	580	677	773	870	967
9	75	90	105	120	135	150	59	492	590	688	787	885	983
10	83	100	117	133	150	167	60	500	600	700	800	900	1000
11	92	110	128	147	165	183	61	508	610	712	813	915	1017
12	100	120	140	160	180	200	62	517	620	723	827	930	1033
13	108	130	152	173	195	217	63	525	630	735	840	945	1050
14	117	140	163	187	210	233	64	533	640	747	853	960	1067
15	125	150	175	200	225	250	65	542	650	758	867	975	1083
16	133	160	187	213	240	267	66	550	660	770	880	990	1100
17	142	170	198	227	255	283	67	558	670	782	893	1005	1117
18	150	180	210	240	270	300	68	567	680	793	907	1020	1133
19	158	190	222	253	285	317	69	575	690	805	920	1035	1150
20	167	200	233	267	300	333	70	583	700	817	933	1050	1167
21	175	210	245	280	315	350	71	592	710	828	947	1065	1183
22	183	220	257	293	330	367	72	600	720	840	960	1080	1200
23	192	230	268	307	345	383	73	608	730	852	973	1095	1217
24	200	240	280	320	360	400	74	617	740	863	987	1110	1233
25	208	250	292	333	375	417	75	625	750	875	1000	1125	1250
26	217	260	303	347	390	433	76	633	760	887	1013	1140	1267
27	225	270	315	360	405	450	77	642	770	898	1027	1155	1283
28	233	280	327	373	420	467	78	650	780	910	1040	1170	1300
29	242	290	338	387	435	483	79	658	790	922	1053	1185	1317
30	250	300	350	400	450	500	80	667	800	933	1067	1200	1333
31	258	310	362	413	465	517	81	675	810	945	1080	1215	1350
32	267	320	373	427	480	533	82	683	820	957	1093	1230	1367
33	275	330	385	440	495	550	83	692	830	968	1107	1245	1383
34	283	340	397	453	510	567	84	700	840	980	1120	1260	1400
35	292	350	408	467	525	583	85	708	850	992	1133	1275	1417
36	300	360	420	480	540	600	86	717	860	1003	1147	1290	1433
37	308	370	432	493	555	617	87	725	870	1015	1160	1305	1450
38	317	380	443	507	570	633	88	733	880	1027	1173	1320	1467
39	325	390	455	520	585	650	89	742	890	1038	1187	1335	1483
40	333	400	467	533	600	667	90	750	900	1050	1200	1350	1500
41	342	410	478	547	615	683	91	758	910	1062	1213	1365	1517
42	350	420	490	560	630	700	92	767	920	1073	1227	1380	1533
43	358	430	502	573	645	717	93	775	930	1085	1240	1395	1550
44	367	440	513	587	660	733	94	783	940	1097	1253	1410	1567
45	375	450	525	600	675	750	95	792	950	1108	1267	1425	1583
46	383	460	537	613	690	767	96	800	960	1120	1280	1440	1600
47	392	470	548	627	705	783	97	808	970	1132	1293	1455	1617
48	400	480	560	640	720	800	98	817	980	1143	1307	1470	1633
49	408	490	572	653	735	817	99	825	990	1155	1320	1485	1650
50	417	500	583	667	750	833	100	833	1000	1167	1333	1500	1667
200	1667	2000	2333	2667	3000	3333	700	5833	7000	8167	9333	10500	11667
300	2500	3000	3500	4000	4500	5000	800	6667	8000	9333	10667	12000	13333
400	3333	4000	4667	5333	6000	6667	900	7500	9000	10500	12000	13500	15000
500	4167	5000	5833	6667	7500	8333	1000	8333	10000	11667	13333	15000	16667
600	5000	6000	7000	8000	9000	10000	2000	16667	20000	23333	26667	30000	33333

2 x 5

2 x 3

1 x 10

1 x 6

1 x 22

1 x 14

1 in.

1 in.

Batts

1 in.

2 x 3.

	10	12	14	16	18	20		10	12	14	16	18	20
1	5	6	7	8	9	10	51	255	306	357	408	459	510
2	10	12	14	16	18	20	52	260	312	364	416	468	520
3	15	18	21	24	27	30	53	265	318	371	424	477	530
4	20	24	28	32	36	40	54	270	324	378	432	486	540
5	25	30	35	40	45	50	55	275	330	385	440	495	550
6	30	36	42	48	54	60	56	280	336	392	448	504	560
7	35	42	49	56	63	70	57	285	342	399	456	513	570
8	40	48	56	64	72	80	58	290	348	406	464	522	580
9	45	54	63	72	81	90	59	295	354	413	472	531	590
10	50	60	70	80	90	100	60	300	360	420	480	540	600
11	55	66	77	88	99	110	61	305	366	427	488	549	610
12	60	72	84	96	108	120	62	310	372	434	496	558	620
13	65	78	91	104	117	130	63	315	378	441	504	567	630
14	70	84	98	112	126	140	64	320	384	448	512	576	640
15	75	90	105	120	135	150	65	325	390	455	520	585	650
16	80	96	112	128	144	160	66	330	396	462	528	594	660
17	85	102	119	136	153	170	67	335	402	469	536	603	670
18	90	108	126	144	162	180	68	340	408	476	544	612	680
19	95	114	133	152	171	190	69	345	414	483	552	621	690
20	100	120	140	160	180	200	70	350	420	490	560	630	700
21	105	126	147	168	189	210	71	355	426	497	568	639	710
22	110	132	154	176	198	220	72	360	432	504	576	648	720
23	115	138	161	184	207	230	73	365	438	511	584	657	730
24	120	144	168	192	216	240	74	370	444	518	592	666	740
25	125	150	175	200	225	250	75	375	450	525	600	675	750
26	130	156	182	208	234	260	76	380	456	532	608	684	760
27	135	162	189	216	243	270	77	385	462	539	616	693	770
28	140	168	196	224	252	280	78	390	468	546	624	702	780
29	145	174	203	232	261	290	79	395	474	553	632	711	790
30	150	180	210	240	270	300	80	400	480	560	640	720	800
31	155	186	217	248	279	310	81	405	486	567	648	729	810
32	160	192	224	256	288	320	82	410	492	574	656	738	820
33	165	198	231	264	297	330	83	415	498	581	664	747	830
34	170	204	238	272	306	340	84	420	504	588	672	756	840
35	175	210	245	280	315	350	85	425	510	595	680	765	850
36	180	216	252	288	324	360	86	430	516	602	688	774	860
37	185	222	259	296	333	370	87	435	522	609	696	783	870
38	190	228	266	304	342	380	88	440	528	616	704	792	880
39	195	234	273	312	351	390	89	445	534	623	712	801	890
40	200	240	280	320	360	400	90	450	540	630	720	810	900
41	205	246	287	328	369	410	91	455	546	637	728	819	910
42	210	252	294	336	378	420	92	460	552	644	736	828	920
43	215	258	301	344	387	430	93	465	558	651	744	837	930
44	220	264	308	352	396	440	94	470	564	658	752	846	940
45	225	270	315	360	405	450	95	475	570	665	760	855	950
46	230	276	322	368	414	460	96	480	576	672	768	864	960
47	235	282	329	376	423	470	97	485	582	679	776	873	970
48	240	288	336	384	432	480	98	490	588	686	784	882	980
49	245	294	343	392	441	490	99	495	594	693	792	891	990
50	250	300	350	400	450	500	100	500	600	700	800	900	1000
200	1000	1200	1400	1600	1800	2000	700	3500	4200	4900	5600	6300	7000
300	1500	1800	2100	2400	2700	3000	800	4000	4800	5600	6400	7200	8000
400	2000	2400	2800	3200	3600	4000	900	4500	5400	6300	7200	8100	9000
500	2500	3000	3500	4000	4500	5000	1000	5000	6000	7000	8000	9000	10000
600	3000	3600	4200	4800	5400	6000	2000	10000	12000	14000	16000	18000	20000

2 x 2

6 x 24

8 x 18

9 x 16

1 x 4

2 x 12

1 x 10

1 x 6

1 x 22

1 x 14

1 in.

1 in.

Batts

1 in.

	10	12	14	16	18	20		10	12	14	16	18	20
1	3 $\frac{1}{2}$	4	4 $\frac{1}{2}$	5 $\frac{1}{2}$	6	6 $\frac{1}{2}$	51	170	204	238	272	306	340
2	7	8	9	11	12	13	52	173	208	243	277	312	347
3	10	12	14	16	18	20	53	177	212	247	283	318	353
4	13	16	19	21	24	27	54	180	216	252	288	324	360
5	17	20	23	27	30	33	55	183	220	257	293	330	367
6	20	24	28	32	36	40	56	187	224	261	299	336	373
7	23	28	33	37	42	47	57	190	228	266	304	342	380
8	27	32	37	43	48	53	58	193	232	271	309	348	387
9	30	36	42	48	54	60	59	197	236	275	315	354	393
10	33	40	47	53	60	67	60	200	240	280	320	360	400
11	37	44	51	59	66	73	61	203	244	285	325	366	407
12	40	48	56	64	72	80	62	207	248	289	331	372	413
13	43	52	61	69	78	87	63	210	252	294	336	378	420
14	47	56	65	75	84	93	64	213	256	299	341	384	427
15	50	60	70	80	90	100	65	217	260	303	347	390	433
16	53	64	75	85	96	107	66	220	264	308	352	396	440
17	57	68	79	91	102	113	67	223	268	313	357	402	447
18	60	72	84	96	108	120	68	227	272	317	363	408	453
19	63	76	89	101	114	127	69	230	276	322	368	414	460
20	67	80	93	107	120	133	70	233	280	327	373	420	467
21	70	84	98	112	126	140	71	237	284	331	379	426	473
22	73	88	103	117	132	147	72	240	288	336	384	432	480
23	77	92	107	123	138	153	73	243	292	341	389	438	487
24	80	96	112	128	144	160	74	247	296	343	395	444	493
25	83	100	117	133	150	167	75	250	300	350	400	450	500
26	87	104	121	139	156	173	76	253	304	355	405	456	507
27	90	108	126	144	162	180	77	257	308	359	411	462	513
28	93	112	131	149	168	187	78	260	312	364	416	468	520
29	97	116	135	155	174	193	79	263	316	369	421	474	527
30	100	120	140	160	180	200	80	267	320	373	427	480	533
31	103	124	145	165	186	207	81	270	324	378	432	486	540
32	107	128	149	171	192	213	82	273	328	383	437	492	547
33	110	132	154	176	198	220	83	277	332	387	443	498	553
34	113	136	159	181	204	227	84	280	336	392	448	504	560
35	117	140	163	187	210	233	85	283	340	397	453	510	567
36	120	144	168	192	216	240	86	287	344	401	459	516	573
37	123	148	173	197	222	247	87	290	348	406	464	522	580
38	127	152	177	203	228	253	88	293	352	411	469	528	587
39	130	156	182	208	234	260	89	297	356	415	475	534	593
40	133	160	187	213	240	267	90	300	360	420	480	540	600
41	137	164	191	219	246	273	91	303	364	425	485	546	607
42	140	168	196	224	252	280	92	307	368	429	491	552	613
43	143	172	201	229	258	287	93	310	372	434	496	558	620
44	147	176	205	235	264	293	94	313	376	439	501	564	627
45	150	180	210	240	270	300	95	317	380	443	507	570	633
46	153	184	215	245	276	307	96	320	384	448	512	576	640
47	157	188	219	251	282	313	97	323	388	453	517	582	647
48	160	192	224	256	288	320	98	327	392	457	523	588	653
49	163	196	229	261	294	327	99	330	396	462	528	594	660
50	167	200	233	267	300	333	100	333	400	467	533	600	667
200	667	800	933	1067	1200	1333	700	2333	2800	3267	3733	4200	4667
300	1000	1200	1400	1600	1800	2000	800	2667	3200	3733	4267	4800	5333
400	1333	1600	1867	2133	2400	2667	900	3000	3600	4200	4800	5400	6000
500	1667	2000	2333	2667	3000	3333	1000	3333 $\frac{1}{3}$	4000	4666 $\frac{2}{3}$	5333 $\frac{1}{3}$	6000	6666 $\frac{2}{3}$
600	2000	2400	2800	3200	3600	4000	2000	6667	8000	9333	10667	12000	13333

9 x 16. 8 x 18. 6 x 24.

	12	14	16	18	20	22	24	26	28	30
1	144	168	192	216	240	264	288	312	336	360
2	288	336	384	432	480	528	576	624	672	720
3	432	504	576	648	720	792	864	936	1008	1080
4	576	672	768	864	960	1056	1152	1248	1344	1440
5	720	840	960	1080	1200	1320	1440	1560	1680	1800
6	864	1008	1152	1296	1440	1584	1728	1872	2016	2160
7	1008	1176	1344	1512	1680	1848	2016	2184	2352	2520
8	1152	1344	1536	1728	1920	2112	2304	2496	2688	2880
9	1296	1512	1728	1944	2160	2376	2592	2808	3024	3240
10	1440	1680	1920	2160	2400	2640	2880	3120	3360	3600
11	1584	1848	2112	2376	2640	2904	3168	3432	3696	3960
12	1728	2016	2304	2592	2880	3168	3456	3744	4032	4320
13	1872	2184	2496	2808	3120	3432	3744	4056	4368	4680
14	2016	2352	2688	3024	3360	3696	4032	4368	4704	5040
15	2160	2520	2880	3240	3600	3960	4320	4680	5040	5400
16	2304	2688	3072	3456	3840	4224	4608	4992	5376	5760
17	2448	2856	3264	3672	4080	4488	4896	5304	5712	6120
18	2592	3024	3456	3888	4320	4752	5184	5616	6048	6480
19	2736	3192	3648	4104	4560	5016	5472	5928	6384	6840
20	2880	3360	3840	4320	4800	5280	5760	6240	6720	7200
21	3024	3528	4032	4536	5040	5544	6048	6552	7056	7560
22	3168	3696	4224	4752	5280	5808	6336	6864	7392	7920
23	3312	3864	4416	4968	5520	6072	6624	7176	7728	8280
24	3456	4032	4608	5184	5760	6336	6912	7488	8064	8640
25	3600	4200	4800	5400	6000	6600	7200	7800	8400	9000
26	3744	4368	4992	5616	6240	6864	7488	8112	8736	9360
27	3888	4536	5184	5832	6480	7128	7776	8424	9072	9720
28	4032	4704	5376	6048	6720	7392	8064	8736	9408	10080
29	4176	4872	5568	6264	6960	7656	8352	9048	9744	10440
30	4320	5040	5760	6480	7200	7920	8640	9360	10080	10800
31	4464	5208	5952	6696	7440	8184	8928	9672	10416	11160
32	4608	5376	6144	6912	7680	8448	9216	9984	10752	11520
33	4752	5544	6336	7128	7920	8712	9504	10296	11088	11880
34	4896	5712	6528	7344	8160	8976	9792	10608	11424	12240
35	5040	5880	6720	7560	8400	9240	10080	10920	11760	12600
36	5184	6048	6912	7776	8640	9504	10368	11232	12096	12960
37	5328	6216	7104	7992	8880	9768	10656	11544	12432	13320
38	5472	6384	7296	8208	9120	10032	10944	11856	12768	13680
39	5616	6552	7488	8424	9360	10296	11232	12168	13104	14040
40	5760	6720	7680	8640	9600	10560	11520	12480	13440	14400
41	5904	6888	7872	8856	9840	10824	11808	12792	13776	14760
42	6048	7056	8064	9072	10080	11088	12096	13104	14112	15120
43	6192	7224	8256	9288	10320	11352	12384	13416	14448	15480
44	6336	7392	8448	9504	10560	11616	12672	13728	14784	15840
45	6480	7560	8640	9720	10800	11880	12960	14040	15120	16200
46	6624	7728	8832	9936	11040	12144	13248	14352	15456	16560
47	6768	7896	9024	10152	11280	12408	13536	14664	15792	16920
48	6912	8064	9216	10368	11520	12672	13824	14976	16128	17280
49	7056	8232	9408	10584	11760	12936	14112	15288	16464	17640
50	7200	8400	9600	10800	12000	13200	14400	15600	16800	18000
100	14400	16800	19200	21600	24000	26400	28800	31200	33600	36000
200	28800	33600	38400	43200	48000	52800	57600	62400	67200	72000
300	43200	50400	57600	64800	72000	79200	86400	93600	100800	108000
400	57600	67200	76800	86400	96000	105600	115200	124800	134400	144000
500	72000	84000	96000	108000	120000	132000	144000	156000	168000	180000

5 x 20

6 x 20

10x12

10x10

1 x 4

12x12

1 x 10

1 x 6

1 x 22

1 x 14

1 1/4 in.

1 in.

Batts

1/2 in.

	12	14	16	18	20	22	24	26	28	30
1	120	140	160	180	200	220	240	260	280	300
2	240	280	320	360	400	440	480	520	560	600
3	360	420	480	540	600	660	720	780	840	900
4	480	560	640	720	800	880	960	1040	1120	1200
5	600	700	800	900	1000	1100	1200	1300	1400	1500
6	720	840	960	1080	1200	1320	1440	1560	1680	1800
7	840	980	1120	1260	1400	1540	1680	1820	1960	2100
8	960	1120	1280	1440	1600	1760	1920	2080	2240	2400
9	1080	1260	1440	1620	1800	1980	2160	2340	2520	2700
10	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
11	1320	1540	1760	1980	2200	2420	2640	2860	3080	3300
12	1440	1680	1920	2160	2400	2640	2880	3120	3360	3600
13	1560	1820	2080	2340	2600	2860	3120	3380	3640	3900
14	1680	1960	2240	2520	2800	3080	3360	3640	3920	4200
15	1800	2100	2400	2700	3000	3300	3600	3900	4200	4500
16	1920	2240	2560	2880	3200	3520	3840	4160	4480	4800
17	2040	2380	2720	3060	3400	3740	4080	4420	4760	5100
18	2160	2520	2880	3240	3600	3960	4320	4680	5040	5400
19	2280	2660	3040	3420	3800	4180	4560	4940	5320	5700
20	2400	2800	3200	3600	4000	4400	4800	5200	5600	6000
21	2520	2940	3360	3780	4200	4620	5040	5460	5880	6300
22	2640	3080	3520	3960	4400	4840	5280	5720	6160	6600
23	2760	3220	3680	4140	4600	5060	5520	5980	6440	6900
24	2880	3360	3840	4320	4800	5280	5760	6240	6720	7200
25	3000	3500	4000	4500	5000	5500	6000	6500	7000	7500
26	3120	3640	4160	4680	5200	5720	6240	6760	7280	7800
27	3240	3780	4320	4860	5400	5940	6480	7020	7560	8100
28	3360	3920	4480	5040	5600	6160	6720	7280	7840	8400
29	3480	4060	4640	5220	5800	6380	6960	7540	8120	8700
30	3600	4200	4800	5400	6000	6600	7200	7800	8400	9000
31	3720	4340	4960	5580	6200	6820	7440	8060	8680	9300
32	3840	4480	5120	5760	6400	7040	7680	8320	8960	9600
33	3960	4620	5280	5940	6600	7260	7920	8580	9240	9900
34	4080	4760	5440	6120	6800	7480	8160	8840	9520	10200
35	4200	4900	5600	6300	7000	7700	8400	9100	9800	10500
36	4320	5040	5760	6480	7200	7920	8640	9360	10080	10800
37	4440	5180	5920	6660	7400	8140	8880	9620	10360	11100
38	4560	5320	6080	6840	7600	8360	9120	9880	10640	11400
39	4680	5460	6240	7020	7800	8580	9360	10140	10920	11700
40	4800	5600	6400	7200	8000	8800	9600	10400	11200	12000
41	4920	5740	6560	7380	8200	9020	9840	10660	11480	12300
42	5040	5880	6720	7560	8400	9240	10080	10920	11760	12600
43	5160	6020	6880	7740	8600	9460	10320	11180	12040	12900
44	5280	6160	7040	7920	8800	9680	10560	11440	12320	13200
45	5400	6300	7200	8100	9000	9900	10800	11700	12600	13500
46	5520	6440	7360	8280	9200	10120	11040	11960	12880	13800
47	5640	6580	7520	8460	9400	10340	11280	12220	13160	14100
48	5760	6720	7680	8640	9600	10560	11520	12480	13440	14400
49	5880	6860	7840	8820	9800	10780	11760	12740	13720	14700
50	6000	7000	8000	9000	10000	11000	12000	13000	14000	15000
100	12000	14000	16000	18000	20000	22000	24000	26000	28000	30000
200	24000	28000	32000	36000	40000	44000	48000	52000	56000	60000
300	36000	42000	48000	54000	60000	66000	72000	78000	84000	90000
400	48000	56000	64000	72000	80000	88000	96000	104000	112000	120000
500	60000	70000	80000	90000	100000	110000	120000	130000	140000	150000

5 x 20.

	12	14	16	18	20	22	24	26	28	30
1	100	116 $\frac{2}{3}$	133 $\frac{1}{3}$	150	166 $\frac{2}{3}$	183 $\frac{1}{3}$	200	216 $\frac{2}{3}$	233 $\frac{1}{3}$	250
2	200	233	267	300	333	367	400	433	467	500
3	300	350	400	450	500	550	600	650	700	750
4	400	467	533	600	667	733	800	867	933	1000
5	500	583	667	750	833	917	1000	1083	1167	1250
6	600	700	800	900	1000	1100	1200	1300	1400	1500
7	700	817	933	1050	1167	1283	1400	1517	1633	1750
8	800	933	1067	1200	1333	1467	1600	1733	1867	2000
9	900	1050	1200	1350	1500	1650	1800	1950	2100	2250
10	1000	1167	1333	1500	1667	1833	2000	2167	2333	2500
11	1100	1283	1467	1650	1833	2017	2200	2383	2567	2750
12	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
13	1300	1517	1733	1950	2167	2383	2600	2817	3033	3250
14	1400	1633	1867	2100	2333	2567	2800	3033	3267	3500
15	1500	1750	2000	2250	2500	2750	3000	3250	3500	3750
16	1600	1867	2133	2400	2667	2933	3200	3467	3733	4000
17	1700	1983	2267	2550	2833	3117	3400	3683	3967	4250
18	1800	2100	2400	2700	3000	3300	3600	3900	4200	4500
19	1900	2217	2533	2850	3167	3483	3800	4117	4433	4750
20	2000	2333	2667	3000	3333	3667	4000	4333	4667	5000
21	2100	2450	2800	3150	3500	3850	4200	4550	4900	5250
22	2200	2567	2933	3300	3667	4033	4400	4767	5133	5500
23	2300	2683	3067	3450	3833	4217	4600	4983	5367	5750
24	2400	2800	3200	3600	4000	4400	4800	5200	5600	6000
25	2500	2917	3333	3750	4167	4583	5000	5417	5833	6250
26	2600	3033	3467	3900	4333	4767	5200	5633	6067	6500
27	2700	3150	3600	4050	4500	4950	5400	5850	6300	6750
28	2800	3267	3733	4200	4667	5133	5600	6067	6533	7000
29	2900	3383	3867	4350	4833	5317	5800	6283	6767	7250
30	3000	3500	4000	4500	5000	5500	6000	6500	7000	7500
31	3100	3617	4133	4650	5167	5683	6200	6717	7233	7750
32	3200	3733	4267	4800	5333	5867	6400	6933	7467	8000
33	3300	3850	4400	4950	5500	6050	6600	7150	7700	8250
34	3400	3967	4533	5100	5667	6233	6800	7367	7933	8500
35	3500	4083	4667	5250	5833	6417	7000	7583	8167	8750
36	3600	4200	4800	5400	6000	6600	7200	7800	8400	9000
37	3700	4317	4933	5550	6167	6783	7400	8017	8633	9250
38	3800	4433	5067	5700	6333	6967	7600	8233	8867	9500
39	3900	4550	5200	5850	6500	7150	7800	8450	9100	9750
40	4000	4667	5333	6000	6667	7333	8000	8667	9333	10000
41	4100	4783	5467	6150	6833	7517	8200	8883	9567	10250
42	4200	4900	5600	6300	7000	7700	8400	9100	9800	10500
43	4300	5017	5733	6450	7167	7883	8600	9317	10033	10750
44	4400	5133	5867	6600	7333	8067	8800	9533	10267	11000
45	4500	5250	6000	6750	7500	8250	9000	9750	10500	11250
46	4600	5367	6133	6900	7667	8433	9200	9967	10733	11500
47	4700	5483	6267	7050	7833	8617	9400	10183	10967	11750
48	4800	5600	6400	7200	8000	8800	9600	10400	11200	12000
49	4900	5717	6533	7350	8167	8983	9800	10617	11433	12250
50	5000	5833	6667	7500	8333	9167	10000	10933	11667	12500
100	10000	11667	13333	15000	16667	18333	20000	21867	23333	25000
200	20000	23333	26667	30000	33333	36667	40000	43733	46667	50000
300	30000	35000	40000	45000	50000	55000	60000	65600	70000	75000
400	40000	46667	53333	60000	66667	73333	80000	87467	93333	100000

4 x 20.

	12	14	16	18	20	22	24	26	28	30
1	80	93 $\frac{1}{2}$	106 $\frac{3}{4}$	120	133 $\frac{1}{2}$	146 $\frac{3}{4}$	160	173 $\frac{1}{2}$	186 $\frac{3}{4}$	200
2	160	187	213	240	267	293	320	347	373	400
3	240	280	320	360	400	440	480	520	560	600
4	320	373	427	480	533	587	640	693	747	800
5	400	467	533	600	667	733	800	867	933	1000
6	480	560	640	720	800	880	960	1040	1120	1200
7	560	653	747	840	933	1027	1120	1213	1307	1400
8	640	747	853	960	1067	1173	1280	1387	1493	1600
9	720	840	960	1080	1200	1320	1440	1560	1680	1800
10	800	933	1067	1200	1333	1467	1600	1733	1867	2000
11	880	1027	1173	1320	1467	1613	1760	1907	2053	2200
12	960	1120	1280	1440	1600	1760	1920	2080	2240	2400
13	1040	1213	1387	1560	1733	1907	2080	2253	2427	2600
14	1120	1307	1493	1680	1867	2053	2240	2427	2613	2800
15	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
16	1280	1493	1707	1920	2133	2347	2560	2773	2987	3200
17	1360	1587	1813	2040	2267	2493	2720	2947	3173	3400
18	1440	1680	1920	2160	2400	2640	2880	3120	3360	3600
19	1520	1773	2027	2280	2533	2787	3040	3293	3547	3800
20	1600	1867	2133	2400	2667	2933	3200	3467	3733	4000
21	1680	1960	2240	2520	2800	3080	3360	3640	3920	4200
22	1760	2053	2347	2640	2933	3227	3520	3813	4107	4400
23	1840	2147	2453	2760	3067	3373	3680	3987	4293	4600
24	1920	2240	2560	2880	3200	3520	3840	4160	4480	4800
25	2000	2333	2667	3000	3333	3667	4000	4333	4667	5000
26	2080	2427	2773	3120	3467	3813	4160	4507	4853	5200
27	2160	2520	2880	3240	3600	3960	4320	4680	5040	5400
28	2240	2613	2987	3360	3733	4107	4480	4853	5227	5600
29	2320	2707	3093	3480	3867	4253	4640	5027	5413	5800
30	2400	2800	3200	3600	4000	4400	4800	5200	5600	6000
31	2480	2893	3307	3720	4133	4547	4960	5373	5787	6200
32	2560	2987	3413	3840	4267	4693	5120	5547	5973	6400
33	2640	3080	3520	3960	4400	4840	5280	5720	6160	6600
34	2720	3173	3627	4080	4533	4987	5440	5893	6347	6800
35	2800	3267	3733	4200	4667	5133	5600	6067	6533	7000
36	2880	3360	3840	4320	4800	5280	5760	6240	6720	7200
37	2960	3453	3947	4440	4933	5427	5920	6413	6907	7400
38	3040	3547	4053	4560	5067	5573	6080	6587	7093	7600
39	3120	3640	4160	4680	5200	5720	6240	6760	7280	7800
40	3200	3733	4267	4800	5333	5867	6400	6933	7467	8000
41	3280	3827	4373	4920	5467	6013	6560	7107	7653	8200
42	3360	3920	4480	5040	5600	6160	6720	7280	7840	8400
43	3440	4013	4587	5160	5733	6307	6880	7453	8027	8600
44	3520	4107	4693	5280	5867	6453	7040	7627	8213	8800
45	3600	4200	4800	5400	6000	6600	7200	7800	8400	9000
46	3680	4293	4907	5520	6133	6747	7360	7973	8587	9200
47	3760	4387	5013	5640	6267	6893	7520	8147	8773	9400
48	3840	4480	5120	5760	6400	7040	7680	8320	8960	9600
49	3920	4573	5227	5880	6533	7187	7840	8493	9147	9800
50	4000	4667	5333	6000	6667	7333	8000	8667	9333	10000
100	8000	9333	10667	12000	13333	14667	16000	17333	18667	20000
200	16000	18667	21333	24000	26667	29333	32000	34667	37333	40000
300	24000	28000	32000	36000	40000	44000	48000	52000	56000	60000
400	32000	37333	42667	48000	53333	58667	64000	69333	74667	80000
500	40000	46666 $\frac{2}{3}$	53333 $\frac{1}{3}$	60000	66666 $\frac{2}{3}$	73333 $\frac{1}{3}$	80000	86666 $\frac{2}{3}$	93333 $\frac{1}{3}$	100000

4 x 20

4 x 16

8 x 10

8 x 8

10 x 12

10 x 10

1 x 4

12 x 12

1 x 10

1 x 6

1 x 22

1 x 14

1 in.

1 in.

Ratts

1 in.

4 x 16.

	12	14	16	18	20	22	24	26	28	30
1	64	74½	85½	96	106½	117½	128	138½	149½	160
2	128	149	171	192	213	235	256	277	299	320
3	192	224	256	288	320	352	384	416	448	480
4	256	299	341	384	427	469	512	555	597	640
5	320	373	427	480	533	587	640	693	747	800
6	384	448	512	576	640	704	768	832	896	960
7	448	523	597	672	747	821	896	971	1045	1120
8	512	597	683	768	853	939	1024	1109	1195	1280
9	576	672	768	864	960	1056	1152	1248	1344	1440
10	640	747	853	960	1067	1173	1280	1387	1493	1600
11	704	821	939	1056	1173	1291	1408	1525	1643	1760
12	768	896	1024	1152	1280	1408	1536	1664	1792	1920
13	832	971	1109	1248	1387	1525	1664	1803	1941	2080
14	896	1045	1195	1344	1493	1643	1792	1941	2091	2240
15	960	1120	1280	1440	1600	1760	1920	2080	2240	2400
16	1024	1195	1365	1536	1707	1877	2048	2219	2389	2560
17	1088	1269	1451	1632	1813	1995	2176	2357	2539	2720
18	1152	1344	1536	1728	1920	2112	2304	2496	2688	2880
19	1216	1419	1621	1824	2027	2229	2432	2635	2837	3040
20	1280	1493	1707	1920	2133	2347	2560	2773	2987	3200
21	1344	1568	1792	2016	2240	2464	2688	2912	3136	3360
22	1408	1643	1877	2112	2347	2581	2816	3051	3285	3520
23	1472	1717	1963	2208	2453	2699	2944	3189	3435	3680
24	1536	1792	2048	2304	2560	2816	3072	3328	3584	3840
25	1600	1867	2133	2400	2667	2933	3200	3467	3733	4000
26	1664	1941	2219	2496	2773	3051	3328	3605	3883	4160
27	1728	2016	2304	2592	2880	3168	3456	3744	4032	4320
28	1792	2091	2389	2688	2987	3285	3584	3883	4181	4480
29	1856	2165	2475	2784	3093	3403	3712	4021	4331	4640
30	1920	2240	2560	2880	3200	3520	3840	4160	4480	4800
31	1984	2315	2645	2976	3307	3637	3968	4299	4629	4960
32	2048	2389	2731	3072	3413	3755	4096	4437	4779	5120
33	2112	2464	2816	3168	3520	3872	4224	4576	4928	5280
34	2176	2539	2901	3264	3627	3989	4352	4715	5077	5440
35	2240	2613	2987	3360	3733	4107	4480	4853	5227	5600
36	2304	2688	3072	3456	3840	4224	4608	4992	5376	5760
37	2368	2763	3157	3552	3947	4341	4736	5131	5525	5920
38	2432	2837	3243	3648	4053	4459	4864	5269	5675	6080
39	2496	2912	3328	3744	4160	4576	4992	5408	5824	6240
40	2560	2987	3413	3840	4267	4693	5120	5547	5973	6400
41	2624	3061	3499	3936	4373	4811	5248	5685	6123	6560
42	2688	3136	3584	4032	4480	4928	5376	5824	6272	6720
43	2752	3211	3669	4128	4587	5045	5504	5963	6421	6880
44	2816	3285	3755	4224	4693	5163	5632	6101	6571	7040
45	2880	3360	3840	4320	4800	5280	5760	6240	6720	7200
46	2944	3435	3925	4416	4907	5397	5888	6379	6869	7360
47	3008	3509	4011	4512	5013	5515	6016	6517	7019	7520
48	3072	3584	4096	4608	5120	5632	6144	6656	7168	7680
49	3136	3659	4181	4704	5227	5749	6272	6795	7317	7840
50	3200	3733	4267	4800	5333	5867	6400	6933	7467	8000
100	6400	7467	8533	9600	10667	11733	12800	13867	14933	16000
200	12800	14933	17067	19200	21333	23467	25600	27733	29867	32000
300	19200	22400	25600	28800	32000	35200	38400	41600	44800	48000
400	25600	29867	34133	38400	42667	46933	51200	55467	59733	64000

2 x 24

4 x 12

3 x 16

1/2 for
18 in.

4 x 9

3 x 12

6 x 8

6 x 6

3 x 10

3 x 8

10 x 12

10 x 10

x 4

2 x 12

x 10

x 6

1 x 22

1 x 14

in.

in.

Batts

in.

	12	14	16	18	20	22	24	26	28	30
1	48	56	64	72	80	88	96	104	112	120
2	96	112	128	144	160	176	192	208	224	240
3	144	168	192	216	240	264	288	312	336	360
4	192	224	256	288	320	352	384	416	448	480
5	240	280	320	360	400	440	480	520	560	600
6	288	336	384	432	480	528	576	624	672	720
7	336	392	448	504	560	616	672	728	784	840
8	384	448	512	576	640	704	768	832	896	960
9	432	504	576	648	720	792	864	936	1008	1080
10	480	560	640	720	800	880	960	1040	1120	1200
11	528	616	704	792	880	968	1056	1144	1232	1320
12	576	672	768	864	960	1056	1152	1248	1344	1440
13	624	728	832	936	1040	1144	1248	1352	1456	1560
14	672	784	896	1008	1120	1232	1344	1456	1568	1680
15	720	840	960	1080	1200	1320	1440	1560	1680	1800
16	768	896	1024	1152	1280	1408	1536	1664	1792	1920
17	816	952	1088	1224	1360	1496	1632	1768	1904	2040
18	864	1008	1152	1296	1440	1584	1728	1872	2016	2160
19	912	1064	1216	1368	1520	1672	1824	1976	2128	2280
20	960	1120	1280	1440	1600	1760	1920	2080	2240	2400
21	1008	1176	1344	1512	1680	1848	2016	2184	2352	2520
22	1056	1232	1408	1584	1760	1936	2112	2288	2464	2640
23	1104	1288	1472	1656	1840	2024	2208	2392	2576	2760
24	1152	1344	1536	1728	1920	2112	2304	2496	2688	2880
25	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
26	1248	1456	1664	1872	2080	2288	2496	2704	2912	3120
27	1296	1512	1728	1944	2160	2376	2592	2808	3024	3240
28	1344	1568	1792	2016	2240	2464	2688	2912	3136	3360
29	1392	1624	1856	2088	2320	2552	2784	3016	3248	3480
30	1440	1680	1920	2160	2400	2640	2880	3120	3360	3600
31	1488	1736	1984	2232	2480	2728	2976	3224	3472	3720
32	1536	1792	2048	2304	2560	2816	3072	3328	3584	3840
33	1584	1848	2112	2376	2640	2904	3168	3432	3696	3960
34	1632	1904	2176	2448	2720	2992	3264	3536	3808	4080
35	1680	1960	2240	2520	2800	3080	3360	3640	3920	4200
36	1728	2016	2304	2592	2880	3168	3456	3744	4032	4320
37	1776	2072	2368	2664	2960	3256	3552	3848	4144	4440
38	1824	2128	2432	2736	3040	3344	3648	3952	4256	4560
39	1872	2184	2496	2808	3120	3432	3744	4056	4368	4680
40	1920	2240	2560	2880	3200	3520	3840	4160	4480	4800
41	1968	2296	2624	2952	3280	3608	3936	4264	4592	4920
42	2016	2352	2688	3024	3360	3696	4032	4368	4704	5040
43	2064	2408	2752	3096	3440	3784	4128	4472	4816	5160
44	2112	2464	2816	3168	3520	3872	4224	4576	4928	5280
45	2160	2520	2880	3240	3600	3960	4320	4680	5040	5400
46	2208	2576	2944	3312	3680	4048	4416	4784	5152	5520
47	2256	2632	3008	3384	3760	4136	4512	4888	5264	5640
48	2304	2688	3072	3456	3840	4224	4608	4992	5376	5760
49	2352	2744	3136	3528	3920	4312	4704	5096	5488	5880
50	2400	2800	3200	3600	4000	4400	4800	5200	5600	6000
100	4800	5600	6400	7200	8000	8800	9600	10400	11200	12000
200	9600	11200	12800	14400	16000	17600	19200	20800	22400	24000
300	14400	16800	19200	21600	24000	26400	28800	31200	33600	36000
400	19200	22400	25600	28800	32000	35200	38400	41600	44800	48000
500	24000	28000	32000	36000	40000	44000	48000	52000	56000	60000

3 x 12. 4 x 9. $\frac{1}{2}$ for 18 in.

	12	14	16	18	20	22	24	26	28	30
1	36	42	48	54	60	66	72	78	84	90
2	72	84	96	108	120	132	144	156	168	180
3	108	126	144	162	180	198	216	234	252	270
4	144	168	192	216	240	264	288	312	336	360
5	180	210	240	270	300	330	360	390	420	450
6	216	252	288	324	360	396	432	468	504	540
7	252	294	336	378	420	462	504	546	588	630
8	288	336	384	432	480	528	576	624	672	720
9	324	378	432	486	540	594	648	702	756	810
10	360	420	480	540	600	660	720	780	840	900
11	396	462	528	594	660	726	792	858	924	990
12	432	504	576	648	720	792	864	936	1008	1080
13	468	546	624	702	780	858	936	1014	1092	1170
14	504	588	672	756	840	924	1008	1092	1176	1260
15	540	630	720	810	900	990	1080	1170	1260	1350
16	576	672	768	864	960	1056	1152	1248	1344	1440
17	612	714	816	918	1020	1122	1224	1326	1428	1530
18	648	756	864	972	1080	1188	1296	1404	1512	1620
19	684	798	912	1026	1140	1254	1368	1482	1596	1710
20	720	840	960	1080	1200	1320	1440	1560	1680	1800
21	756	882	1008	1134	1260	1386	1512	1638	1764	1890
22	792	924	1056	1188	1320	1452	1584	1716	1848	1980
23	828	966	1104	1242	1380	1518	1656	1794	1932	2070
24	864	1008	1152	1296	1440	1584	1728	1872	2016	2160
25	900	1050	1200	1350	1500	1650	1800	1950	2100	2250
26	936	1092	1248	1404	1560	1716	1872	2028	2184	2340
27	972	1134	1296	1458	1620	1782	1944	2106	2268	2430
28	1008	1176	1344	1512	1680	1848	2016	2184	2352	2520
29	1044	1218	1392	1566	1740	1914	2088	2262	2436	2610
30	1080	1260	1440	1620	1800	1980	2160	2340	2520	2700
31	1116	1302	1488	1674	1860	2046	2232	2418	2604	2790
32	1152	1344	1536	1728	1920	2112	2304	2496	2688	2880
33	1188	1386	1584	1782	1980	2178	2376	2574	2772	2970
34	1224	1428	1632	1836	2040	2244	2448	2652	2856	3060
35	1260	1470	1680	1890	2100	2310	2520	2730	2940	3150
36	1296	1512	1728	1944	2160	2376	2592	2808	3024	3240
37	1332	1554	1776	1998	2220	2442	2664	2886	3108	3330
38	1368	1596	1824	2052	2280	2508	2736	2964	3192	3420
39	1404	1638	1872	2106	2340	2574	2808	3042	3276	3510
40	1440	1680	1920	2160	2400	2640	2880	3120	3360	3600
41	1476	1722	1968	2214	2460	2706	2952	3198	3444	3690
42	1512	1764	2016	2268	2520	2772	3024	3276	3528	3780
43	1548	1806	2064	2322	2580	2838	3096	3354	3612	3870
44	1584	1848	2112	2376	2640	2904	3168	3432	3696	3960
45	1620	1890	2160	2430	2700	2970	3240	3510	3780	4050
46	1656	1932	2208	2484	2760	3036	3312	3588	3864	4140
47	1692	1974	2256	2538	2820	3102	3384	3666	3948	4230
48	1728	2016	2304	2592	2880	3168	3456	3744	4032	4320
49	1764	2058	2352	2646	2940	3234	3528	3822	4116	4410
50	1800	2100	2400	2700	3000	3300	3600	3900	4200	4500
100	3600	4200	4800	5400	6000	6600	7200	7800	8400	9000
200	7200	8400	9600	10800	12000	13200	14400	15600	16800	18000
300	10800	12600	14400	16200	18000	19800	21600	23400	25200	27000
400	14400	16800	19200	21600	24000	26400	28800	31200	33600	36000

6 x 7.

	12	14	16	18	20	22	24	26	28	30
1	42	49	56	63	70	77	84	91	98	105
2	84	98	112	126	140	154	168	182	196	210
3	126	147	168	189	210	231	252	273	294	315
4	168	196	224	252	280	308	336	364	392	420
5	210	245	280	315	350	385	420	455	490	525
6	252	294	336	378	420	462	504	546	588	630
7	294	343	392	441	490	539	588	637	686	735
8	336	392	448	504	560	616	672	728	784	840
9	378	441	504	567	630	693	756	819	882	945
10	420	490	560	630	700	770	840	910	980	1050
11	462	539	616	693	770	847	924	1001	1078	1155
12	504	588	672	756	840	924	1008	1092	1176	1260
13	546	637	728	819	910	1001	1092	1183	1274	1365
14	588	686	784	882	980	1078	1176	1274	1372	1470
15	630	735	840	945	1050	1155	1260	1365	1470	1575
16	672	784	896	1008	1120	1232	1344	1456	1568	1680
17	714	833	952	1071	1190	1309	1428	1547	1666	1785
18	756	882	1008	1134	1260	1386	1512	1638	1764	1890
19	798	931	1064	1197	1330	1463	1596	1729	1862	1995
20	840	980	1120	1260	1400	1540	1680	1820	1960	2100
21	882	1029	1176	1323	1470	1617	1764	1911	2058	2205
22	924	1078	1232	1386	1540	1694	1848	2002	2156	2310
23	966	1127	1288	1449	1610	1771	1932	2093	2254	2415
24	1008	1176	1344	1512	1680	1848	2016	2184	2352	2520
25	1050	1225	1400	1575	1750	1925	2100	2275	2450	2625
26	1092	1274	1456	1638	1820	2002	2184	2366	2548	2730
27	1134	1323	1512	1701	1890	2079	2268	2457	2646	2835
28	1176	1372	1568	1764	1960	2156	2352	2548	2744	2940
29	1218	1421	1624	1827	2030	2233	2436	2639	2842	3045
30	1260	1470	1680	1890	2100	2310	2520	2730	2940	3150
31	1302	1519	1736	1953	2170	2387	2604	2821	3038	3255
32	1344	1568	1792	2016	2240	2464	2688	2912	3136	3360
33	1386	1617	1848	2079	2310	2541	2772	3003	3234	3465
34	1428	1666	1904	2142	2380	2618	2856	3094	3332	3570
35	1470	1715	1960	2205	2450	2695	2940	3185	3430	3675
36	1512	1764	2016	2268	2520	2772	3024	3276	3528	3780
37	1554	1813	2072	2331	2590	2849	3108	3367	3626	3885
38	1596	1862	2128	2394	2660	2926	3192	3458	3724	3990
39	1638	1911	2184	2457	2730	3003	3276	3549	3822	4095
40	1680	1960	2240	2520	2800	3080	3360	3640	3920	4200
41	1722	2009	2296	2583	2870	3157	3444	3731	4018	4305
42	1764	2058	2352	2646	2940	3234	3528	3822	4116	4410
43	1806	2107	2408	2709	3010	3311	3612	3913	4214	4515
44	1848	2156	2464	2772	3080	3388	3696	4004	4312	4620
45	1890	2205	2520	2835	3150	3465	3780	4095	4410	4725
46	1932	2254	2576	2898	3220	3542	3864	4186	4508	4830
47	1974	2303	2632	2961	3290	3619	3948	4277	4606	4935
48	2016	2352	2688	3024	3360	3696	4032	4368	4704	5040
49	2058	2401	2744	3087	3430	3773	4116	4459	4802	5145
50	2100	2450	2800	3150	3500	3850	4200	4550	4900	5250
100	4200	4900	5600	6300	7000	7700	8400	9100	9800	10500
200	8400	9800	11200	12600	14000	15400	16800	18200	19600	21000
300	12600	14700	16800	18900	21000	23100	25200	27300	29400	31500
400	16800	19600	22400	25200	28000	30800	33600	36400	39200	42000
500	21000	24500	28000	31500	35000	38500	42000	45500	49000	52500

5 x 6. 2 x 15.

	12	14	16	18	20	22	24	26	28	30
1	30	35	40	45	50	55	60	65	70	75
2	60	70	80	90	100	110	120	130	140	150
3	90	105	120	135	150	165	180	195	210	225
4	120	140	160	180	200	220	240	260	280	300
5	150	175	200	225	250	275	300	325	350	375
6	180	210	240	270	300	330	360	390	420	450
7	210	245	280	315	350	385	420	455	490	525
8	240	280	320	360	400	440	480	520	560	600
9	270	315	360	405	450	495	540	585	630	675
10	300	350	400	450	500	550	600	650	700	750
11	330	385	440	495	550	605	660	715	770	825
12	360	420	480	540	600	660	720	780	840	900
13	390	455	520	585	650	715	780	845	910	975
14	420	490	560	630	700	770	840	910	980	1050
15	450	525	600	675	750	825	900	975	1050	1125
16	480	560	640	720	800	880	960	1040	1120	1200
17	510	595	680	765	850	935	1020	1105	1190	1275
18	540	630	720	810	900	990	1080	1170	1260	1350
19	570	665	760	855	950	1045	1140	1235	1330	1425
20	600	700	800	900	1000	1100	1200	1300	1400	1500
21	630	735	840	945	1050	1155	1260	1365	1470	1575
22	660	770	880	990	1100	1210	1320	1430	1540	1650
23	690	805	920	1035	1150	1265	1380	1495	1610	1725
24	720	840	960	1080	1200	1320	1440	1560	1680	1800
25	750	875	1000	1125	1250	1375	1500	1625	1750	1875
26	780	910	1040	1170	1300	1430	1560	1690	1820	1950
27	810	945	1080	1215	1350	1485	1620	1755	1890	2025
28	840	980	1120	1260	1400	1540	1680	1820	1960	2100
29	870	1015	1160	1305	1450	1595	1740	1885	2030	2175
30	900	1050	1200	1350	1500	1650	1800	1950	2100	2250
31	930	1085	1240	1395	1550	1705	1860	2015	2170	2325
32	960	1120	1280	1440	1600	1760	1920	2080	2240	2400
33	990	1155	1320	1485	1650	1815	1980	2145	2310	2475
34	1020	1190	1360	1530	1700	1870	2040	2210	2380	2550
35	1050	1225	1400	1575	1750	1925	2100	2275	2450	2625
36	1080	1260	1440	1620	1800	1980	2160	2340	2520	2700
37	1110	1295	1480	1665	1850	2035	2220	2405	2590	2775
38	1140	1330	1520	1710	1900	2090	2280	2470	2660	2850
39	1170	1365	1560	1755	1950	2145	2340	2535	2730	2925
40	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
41	1230	1435	1640	1845	2050	2255	2460	2665	2870	3075
42	1260	1470	1680	1890	2100	2310	2520	2730	2940	3150
43	1290	1505	1720	1935	2150	2365	2580	2795	3010	3225
44	1320	1540	1760	1980	2200	2420	2640	2860	3080	3300
45	1350	1575	1800	2025	2250	2475	2700	2925	3150	3375
46	1380	1610	1840	2070	2300	2530	2760	2990	3220	3450
47	1410	1645	1880	2115	2350	2585	2820	3055	3290	3525
48	1440	1680	1920	2160	2400	2640	2880	3120	3360	3600
49	1470	1715	1960	2205	2450	2695	2940	3185	3430	3675
50	1500	1750	2000	2250	2500	2750	3000	3250	3500	3750
100	3000	3500	4000	4500	5000	5500	6000	6500	7000	7500
200	6000	7000	8000	9000	10000	11000	12000	13000	14000	15000
300	9000	10500	12000	13500	15000	16500	18000	19500	21000	22500
400	12000	14000	16000	18000	20000	22000	24000	26000	28000	30000

	12	14	16	18	20	22	24	26	28	30
1	28	32 $\frac{3}{4}$	37 $\frac{1}{4}$	42	46 $\frac{3}{4}$	51 $\frac{1}{2}$	56	60 $\frac{3}{4}$	65 $\frac{1}{4}$	70
2	56	65	75	84	93	103	112	121	131	140
3	84	98	112	126	140	154	168	182	196	210
4	112	131	149	168	187	205	224	243	261	280
5	140	163	187	210	233	257	280	303	327	350
6	168	196	224	252	280	308	336	364	392	420
7	196	229	261	294	327	359	392	425	457	490
8	224	261	299	336	373	411	448	485	523	560
9	252	294	336	378	420	462	504	546	588	630
10	280	327	373	420	467	513	560	607	653	700
11	308	359	411	462	513	565	616	667	719	770
12	336	392	448	504	560	616	672	728	784	840
13	364	425	485	546	607	667	728	789	849	910
14	392	457	523	588	653	719	784	849	915	980
15	420	490	560	630	700	770	840	910	980	1050
16	448	523	597	672	747	821	896	971	1045	1120
17	476	555	635	714	793	873	952	1031	1111	1190
18	504	588	672	756	840	924	1008	1092	1176	1260
19	532	621	709	798	887	975	1064	1153	1241	1330
20	560	653	747	840	933	1027	1120	1213	1307	1400
21	588	686	784	882	980	1078	1176	1274	1372	1470
22	616	719	821	924	1027	1129	1232	1335	1437	1540
23	644	751	859	966	1073	1181	1288	1395	1503	1610
24	672	784	896	1008	1120	1232	1344	1456	1568	1680
25	700	817	933	1050	1167	1283	1400	1517	1633	1750
26	728	849	971	1092	1213	1335	1456	1577	1699	1820
27	756	882	1008	1134	1260	1386	1512	1638	1764	1890
28	784	915	1045	1176	1307	1437	1568	1699	1829	1960
29	812	947	1083	1218	1353	1489	1624	1759	1895	2030
30	840	980	1120	1260	1400	1540	1680	1820	1960	2100
31	868	1013	1157	1302	1447	1591	1736	1881	2025	2170
32	896	1045	1195	1344	1493	1643	1792	1941	2091	2240
33	924	1078	1232	1386	1540	1694	1848	2002	2156	2310
34	952	1111	1269	1428	1587	1745	1904	2063	2221	2380
35	980	1143	1307	1470	1633	1797	1960	2123	2287	2450
36	1008	1176	1344	1512	1680	1848	2016	2184	2352	2520
37	1036	1209	1381	1554	1727	1899	2072	2245	2417	2590
38	1064	1241	1419	1596	1773	1951	2128	2305	2483	2660
39	1092	1274	1456	1638	1820	2002	2184	2366	2548	2730
40	1120	1307	1493	1680	1867	2053	2240	2427	2613	2800
41	1148	1339	1531	1722	1913	2105	2296	2487	2679	2870
42	1176	1372	1568	1764	1960	2156	2352	2548	2744	2940
43	1204	1405	1605	1806	2007	2207	2408	2609	2809	3010
44	1232	1437	1643	1848	2053	2259	2464	2669	2875	3080
45	1260	1470	1680	1890	2100	2310	2520	2730	2940	3150
46	1288	1503	1717	1932	2147	2361	2576	2791	3005	3220
47	1316	1535	1755	1974	2193	2413	2632	2851	3071	3290
48	1344	1568	1792	2016	2240	2464	2688	2912	3136	3360
49	1372	1601	1829	2058	2287	2515	2744	2973	3201	3430
50	1400	1633	1867	2100	2333	2567	2800	3033	3267	3500
200	5600	6533	7467	8400	9333	10267	11200	12133	13067	14000
300	8400	9800	11200	12600	14000	15400	16800	18200	19600	21000
400	11200	13067	14933	16800	18667	20533	22400	24267	26133	28000
500	14000	16333	18667	21000	23333	25667	28000	30333	32667	35000
600	16800	19600	22400	25200	28000	30800	33600	36400	39200	42000

4 x 7.

	12	14	16	18	20	22	24	26	28	30
51	1423	1666	1904	2142	2380	2618	2856	3094	3332	3570
52	1456	1699	1941	2184	2427	2669	2912	3155	3397	3640
53	1484	1731	1979	2226	2473	2721	2968	3215	3463	3710
54	1512	1764	2016	2268	2520	2772	3024	3276	3528	3780
55	1540	1797	2053	2310	2567	2823	3080	3337	3593	3850
56	1568	1829	2091	2352	2613	2875	3136	3397	3659	3920
57	1596	1862	2128	2394	2660	2926	3192	3458	3724	3990
58	1624	1895	2165	2436	2707	2977	3248	3519	3789	4060
59	1652	1927	2203	2478	2753	3029	3304	3579	3855	4130
60	1680	1960	2240	2520	2800	3080	3360	3640	3920	4200
61	1708	1993	2277	2562	2847	3131	3416	3701	3985	4270
62	1736	2025	2315	2604	2893	3183	3472	3761	4051	4340
63	1764	2058	2352	2646	2940	3234	3528	3822	4116	4410
64	1792	2091	2389	2688	2987	3285	3584	3883	4181	4480
65	1820	2123	2427	2730	3033	3337	3640	3943	4247	4550
66	1848	2156	2464	2772	3080	3388	3696	4004	4312	4620
67	1876	2189	2501	2814	3127	3439	3752	4065	4377	4690
68	1904	2221	2539	2856	3173	3491	3808	4125	4443	4760
69	1932	2254	2576	2898	3220	3542	3864	4186	4508	4830
70	1960	2287	2613	2940	3267	3593	3920	4247	4573	4900
71	1988	2319	2651	2982	3313	3645	3976	4307	4639	4970
72	2016	2352	2688	3024	3360	3696	4032	4368	4704	5040
73	2044	2385	2725	3066	3407	3747	4088	4429	4769	5110
74	2072	2417	2763	3108	3453	3799	4144	4489	4835	5180
75	2100	2450	2800	3150	3500	3850	4200	4550	4900	5250
76	2128	2483	2837	3192	3547	3901	4256	4611	4965	5320
77	2156	2515	2875	3234	3593	3953	4312	4671	5031	5390
78	2184	2548	2912	3276	3640	4004	4368	4732	5096	5460
79	2212	2581	2949	3318	3687	4055	4424	4793	5161	5530
80	2240	2613	2987	3360	3733	4107	4480	4853	5227	5600
81	2268	2646	3024	3402	3780	4158	4536	4914	5292	5670
82	2296	2679	3061	3444	3827	4209	4592	4975	5357	5740
83	2324	2711	3099	3486	3873	4261	4648	5035	5423	5810
84	2352	2744	3136	3528	3920	4312	4704	5096	5488	5880
85	2380	2777	3173	3570	3967	4363	4760	5157	5553	5950
86	2408	2809	3211	3612	4013	4415	4816	5217	5619	6020
87	2436	2842	3248	3654	4060	4466	4872	5278	5684	6090
88	2464	2875	3285	3696	4107	4517	4928	5339	5749	6160
89	2492	2907	3323	3738	4153	4569	4984	5399	5815	6230
90	2520	2940	3360	3780	4200	4620	5040	5460	5880	6300
91	2548	2973	3397	3822	4247	4671	5096	5521	5945	6370
92	2576	3005	3435	3864	4293	4723	5152	5581	6011	6440
93	2604	3038	3472	3906	4340	4774	5208	5642	6076	6510
94	2632	3071	3509	3948	4387	4825	5264	5703	6141	6580
95	2660	3103	3547	3990	4433	4877	5320	5763	6207	6650
96	2688	3136	3584	4032	4480	4928	5376	5824	6272	6720
97	2716	3169	3621	4074	4527	4979	5432	5885	6337	6790
98	2744	3201	3659	4116	4573	5031	5488	5945	6403	6860
99	2772	3234	3696	4158	4620	5082	5544	6006	6468	6930
100	2800	3267	3733	4200	4667	5133	5600	6067	6533	7000
700	19600	22867	26133	29400	32667	35933	39200	42467	45733	49000
800	22400	26133	29867	33600	37333	41067	44800	48533	52267	56000
900	25200	29400	33600	37800	42000	46200	50400	54600	58800	63000
1000	28000	32666½	37333½	42000	46666½	51333½	56000	60666½	65333½	70000
2000	56000	65333	74667	84000	93333	102667	112000	121333	130667	140000

4 x 6. 3 x 8. 24 in.

	10	12	14	16	18	20	22	24	26	28	30
1	20	24	28	32	36	40	44	48	52	56	60
2	40	48	56	64	72	80	88	96	104	112	120
3	60	72	84	96	108	120	132	144	156	168	180
4	80	96	112	128	144	160	176	192	208	224	240
5	100	120	140	160	180	200	220	240	260	280	300
6	120	144	168	192	216	240	264	288	312	336	360
7	140	168	196	224	252	280	308	336	364	392	420
8	160	192	224	256	288	320	352	384	416	448	480
9	180	216	252	288	324	360	396	432	468	504	540
10	200	240	280	320	360	400	440	480	520	560	600
11	220	264	308	352	396	440	484	528	572	616	660
12	240	288	336	384	432	480	528	576	624	672	720
13	260	312	364	416	468	520	572	624	676	728	780
14	280	336	392	448	504	560	616	672	728	784	840
15	300	360	420	480	540	600	660	720	780	840	900
16	320	384	448	512	576	640	704	768	832	896	960
17	340	408	476	544	612	680	748	816	884	952	1020
18	360	432	504	576	648	720	792	864	936	1008	1080
19	380	456	532	608	684	760	836	912	988	1064	1140
20	400	480	560	640	720	800	880	960	1040	1120	1200
21	420	504	588	672	756	840	924	1008	1092	1176	1260
22	440	528	616	704	792	880	968	1056	1144	1232	1320
23	460	552	644	736	828	920	1012	1104	1196	1288	1380
24	480	576	672	768	864	960	1056	1152	1248	1344	1440
25	500	600	700	800	900	1000	1100	1200	1300	1400	1500
26	520	624	728	832	936	1040	1144	1248	1352	1456	1560
27	540	648	756	864	972	1080	1188	1296	1404	1512	1620
28	560	672	784	896	1008	1120	1232	1344	1456	1568	1680
29	580	696	812	928	1044	1160	1276	1392	1508	1624	1740
30	600	720	840	960	1080	1200	1320	1440	1560	1680	1800
31	620	744	868	992	1116	1240	1364	1488	1612	1736	1860
32	640	768	896	1024	1152	1280	1408	1536	1664	1792	1920
33	660	792	924	1056	1188	1320	1452	1584	1716	1848	1980
34	680	816	952	1088	1224	1360	1496	1632	1768	1904	2040
35	700	840	980	1120	1260	1400	1540	1680	1820	1960	2100
36	720	864	1008	1152	1296	1440	1584	1728	1872	2016	2160
37	740	888	1036	1184	1332	1480	1628	1776	1924	2072	2220
38	760	912	1064	1216	1368	1520	1672	1824	1976	2128	2280
39	780	936	1092	1248	1404	1560	1716	1872	2028	2184	2340
40	800	960	1120	1280	1440	1600	1760	1920	2080	2240	2400
41	820	984	1148	1312	1476	1640	1804	1968	2132	2296	2460
42	840	1008	1176	1344	1512	1680	1848	2016	2184	2352	2520
43	860	1032	1204	1376	1548	1720	1892	2064	2236	2408	2580
44	880	1056	1232	1408	1584	1760	1936	2112	2288	2464	2640
45	900	1080	1260	1440	1620	1800	1980	2160	2340	2520	2700
46	920	1104	1288	1472	1656	1840	2024	2208	2392	2576	2760
47	940	1128	1316	1504	1692	1880	2068	2256	2444	2632	2820
48	960	1152	1344	1536	1728	1920	2112	2304	2496	2688	2880
49	980	1176	1372	1568	1764	1960	2156	2352	2548	2744	2940
50	1000	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
200	4000	4800	5600	6400	7200	8000	8800	9600	10400	11200	12000
300	6000	7200	8400	9600	10800	12000	13200	14400	15600	16800	18000
400	8000	9600	11200	12800	14400	16000	17600	19200	20800	22400	24000
500	10000	12000	14000	16000	18000	20000	22000	24000	26000	28000	30000
600	12000	14400	16800	19200	21600	24000	26400	28800	31200	33600	36000

4 x 6. 3 x 8. 24 in.

	10	12	14	16	18	20	22	24	26	28	30
51	1020	1224	1428	1632	1836	2040	2244	2448	2652	2856	3060
52	1040	1248	1456	1664	1872	2080	2288	2496	2704	2912	3120
53	1060	1272	1484	1696	1908	2120	2332	2544	2756	2968	3180
54	1080	1296	1512	1728	1944	2160	2376	2592	2808	3024	3240
55	1100	1320	1540	1760	1980	2200	2420	2640	2860	3080	3300
56	1120	1344	1568	1792	2016	2240	2464	2688	2912	3136	3360
57	1140	1368	1596	1824	2052	2280	2508	2736	2964	3192	3420
58	1160	1392	1624	1856	2088	2320	2552	2784	3016	3248	3480
59	1180	1416	1652	1888	2124	2360	2596	2832	3068	3304	3540
60	1200	1440	1680	1920	2160	2400	2640	2880	3120	3360	3600
61	1220	1464	1708	1952	2196	2440	2684	2928	3172	3416	3660
62	1240	1488	1736	1984	2232	2480	2728	2976	3224	3472	3720
63	1260	1512	1764	2016	2268	2520	2772	3024	3276	3528	3780
64	1280	1536	1792	2048	2304	2560	2816	3072	3328	3584	3840
65	1300	1560	1820	2080	2340	2600	2860	3120	3380	3640	3900
66	1320	1584	1848	2112	2376	2640	2904	3168	3432	3696	3960
67	1340	1608	1876	2144	2412	2680	2948	3216	3484	3752	4020
68	1360	1632	1904	2176	2448	2720	2992	3264	3536	3808	4080
69	1380	1656	1932	2208	2484	2760	3036	3312	3588	3864	4140
70	1400	1680	1960	2240	2520	2800	3080	3360	3640	3920	4200
71	1420	1704	1988	2272	2556	2840	3124	3408	3692	3976	4260
72	1440	1728	2016	2304	2592	2880	3168	3456	3744	4032	4320
73	1460	1752	2044	2336	2628	2920	3212	3504	3796	4088	4380
74	1480	1776	2072	2368	2664	2960	3256	3552	3848	4144	4440
75	1500	1800	2100	2400	2700	3000	3300	3600	3900	4200	4500
76	1520	1824	2128	2432	2736	3040	3344	3648	3952	4256	4560
77	1540	1848	2156	2464	2772	3080	3388	3696	4004	4312	4620
78	1560	1872	2184	2496	2808	3120	3432	3744	4056	4368	4680
79	1580	1896	2212	2528	2844	3160	3476	3792	4108	4424	4740
80	1600	1920	2240	2560	2880	3200	3520	3840	4160	4480	4800
81	1620	1944	2268	2592	2916	3240	3564	3888	4212	4536	4860
82	1640	1968	2296	2624	2952	3280	3608	3936	4264	4592	4920
83	1660	1992	2324	2656	2988	3320	3652	3984	4316	4648	4980
84	1680	2016	2352	2688	3024	3360	3696	4032	4368	4704	5040
85	1700	2040	2380	2720	3060	3400	3740	4080	4420	4760	5100
86	1720	2064	2408	2752	3096	3440	3784	4128	4472	4816	5160
87	1740	2088	2436	2784	3132	3480	3828	4176	4524	4872	5220
88	1760	2112	2464	2816	3168	3520	3872	4224	4576	4928	5280
89	1780	2136	2492	2848	3204	3560	3916	4272	4628	4984	5340
90	1800	2160	2520	2880	3240	3600	3960	4320	4680	5040	5400
91	1820	2184	2548	2912	3276	3640	4004	4368	4732	5096	5460
92	1840	2208	2576	2944	3312	3680	4048	4416	4784	5152	5520
93	1860	2232	2604	2976	3348	3720	4092	4464	4836	5208	5580
94	1880	2256	2632	3008	3384	3760	4136	4512	4888	5264	5640
95	1900	2280	2660	3040	3420	3800	4180	4560	4940	5320	5700
96	1920	2304	2688	3072	3456	3840	4224	4608	4992	5376	5760
97	1940	2328	2716	3104	3492	3880	4268	4656	5044	5432	5820
98	1960	2352	2744	3136	3528	3920	4312	4704	5096	5488	5880
99	1980	2376	2772	3168	3564	3960	4356	4752	5148	5544	5940
100	2000	2400	2800	3200	3600	4000	4400	4800	5200	5600	6000
700	14000	16800	19600	22400	25200	28000	30800	33600	36400	39200	42000
800	16000	19200	22400	25600	28800	32000	35200	38400	41600	44800	48000
900	18000	21600	25200	28800	32400	36000	39600	43200	46800	50400	54000
1000	20000	24000	28000	32000	36000	40000	44000	48000	52000	56000	60000

	10	12	14	16	18	20	22	24	26	28	30
1	16 $\frac{2}{3}$	20	23 $\frac{1}{3}$	26 $\frac{2}{3}$	30	33 $\frac{1}{3}$	36 $\frac{2}{3}$	40	43 $\frac{1}{3}$	46 $\frac{2}{3}$	50
2	33	40	47	53	60	67	73	80	87	93	100
3	50	60	70	80	90	100	110	120	130	140	150
4	67	80	93	107	120	133	147	160	173	187	200
5	83	100	117	133	150	167	183	200	217	233	250
6	100	120	140	160	180	200	220	240	260	280	300
7	117	140	163	187	210	233	257	280	303	327	350
8	133	160	187	213	240	267	293	320	347	373	400
9	150	180	210	240	270	300	330	360	390	420	450
10	167	200	233	267	300	333	367	400	433	467	500
11	183	220	257	293	330	367	403	440	477	513	550
12	200	240	280	320	360	400	440	480	520	560	600
13	217	260	303	347	390	433	477	520	563	607	650
14	233	280	327	373	420	467	513	560	607	653	700
15	250	300	350	400	450	500	550	600	650	700	750
16	267	320	373	427	480	533	587	640	693	747	800
17	283	340	397	453	510	567	623	680	737	793	850
18	300	360	420	480	540	600	660	720	780	840	900
19	317	380	443	507	570	633	697	760	823	887	950
20	333	400	467	533	600	667	733	800	867	933	1000
21	350	420	490	560	630	700	770	840	910	980	1050
22	367	440	513	587	660	733	807	880	953	1027	1100
23	383	460	537	613	690	767	843	920	997	1073	1150
24	400	480	560	640	720	800	880	960	1040	1120	1200
25	417	500	583	667	750	833	917	1000	1083	1167	1250
26	433	520	607	693	780	867	953	1040	1127	1213	1300
27	450	540	630	720	810	900	990	1080	1170	1260	1350
28	467	560	653	747	840	933	1027	1120	1213	1307	1400
29	483	580	677	773	870	967	1063	1160	1257	1353	1450
30	500	600	700	800	900	1000	1100	1200	1300	1400	1500
31	517	620	723	827	930	1033	1137	1240	1343	1447	1550
32	533	640	747	853	960	1067	1173	1280	1387	1493	1600
33	550	660	770	880	990	1100	1210	1320	1430	1540	1650
34	567	680	793	907	1020	1133	1247	1360	1473	1587	1700
35	583	700	817	933	1050	1167	1283	1400	1517	1633	1750
36	600	720	840	960	1080	1200	1320	1440	1560	1680	1800
37	617	740	863	987	1110	1233	1357	1480	1603	1727	1850
38	633	760	887	1013	1140	1267	1393	1520	1647	1773	1900
39	650	780	910	1040	1170	1300	1430	1560	1690	1820	1950
40	667	800	933	1067	1200	1333	1467	1600	1733	1867	2000
41	683	820	957	1093	1230	1367	1503	1640	1777	1913	2050
42	700	840	980	1120	1260	1400	1540	1680	1820	1960	2100
43	717	860	1003	1147	1290	1433	1577	1720	1863	2007	2150
44	733	880	1027	1173	1320	1467	1613	1760	1907	2053	2200
45	750	900	1050	1200	1350	1500	1650	1800	1950	2100	2250
46	767	920	1073	1227	1380	1533	1687	1840	1993	2147	2300
47	783	940	1097	1253	1410	1567	1723	1880	2037	2193	2350
48	800	960	1120	1280	1440	1600	1760	1920	2080	2240	2400
49	817	980	1143	1307	1470	1633	1797	1960	2123	2287	2450
50	833	1000	1167	1333	1500	1667	1833	2000	2167	2333	2500
200	3333	4000	4667	5333	6000	6667	7333	8000	8667	9333	10000
300	5000	6000	7000	8000	9000	10000	11000	12000	13000	14000	15000
400	6667	8000	9333	10667	12000	13333	14667	16000	17333	18667	20000
500	8333	10000	11667	13333	15000	16667	18333	20000	21667	23333	25000
600	10000	12000	14000	16000	18000	20000	22000	24000	26000	28000	30000

4 x 5. 20 in.

	10	12	14	16	18	20	22	24	26	28	30
51	850	1020	1190	1360	1530	1700	1870	2040	2210	2380	2550
52	867	1040	1213	1387	1560	1733	1907	2080	2253	2427	2600
53	883	1060	1237	1413	1590	1767	1943	2120	2297	2473	2650
54	900	1080	1260	1440	1620	1800	1980	2160	2340	2520	2700
55	917	1100	1283	1467	1650	1833	2017	2200	2383	2567	2750
56	933	1120	1307	1493	1680	1867	2053	2240	2427	2613	2800
57	950	1140	1330	1520	1710	1900	2090	2280	2470	2660	2850
58	967	1160	1353	1547	1740	1933	2127	2320	2513	2707	2900
59	983	1180	1377	1573	1770	1967	2163	2360	2557	2753	2950
60	1000	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
61	1017	1220	1423	1627	1830	2033	2237	2440	2643	2847	3050
62	1033	1240	1447	1653	1860	2067	2273	2480	2687	2893	3100
63	1050	1260	1470	1680	1890	2100	2310	2520	2730	2940	3150
64	1067	1280	1493	1707	1920	2133	2347	2560	2773	2987	3200
65	1083	1300	1517	1733	1950	2167	2383	2600	2817	3033	3250
66	1100	1320	1540	1760	1980	2200	2420	2640	2860	3080	3300
67	1117	1340	1563	1787	2010	2233	2457	2680	2903	3127	3350
68	1133	1360	1587	1813	2040	2267	2493	2720	2947	3173	3400
69	1150	1380	1610	1840	2070	2300	2530	2760	2990	3220	3450
70	1167	1400	1633	1867	2100	2333	2567	2800	3033	3267	3500
71	1183	1420	1657	1893	2130	2367	2603	2840	3077	3313	3550
72	1200	1440	1680	1920	2160	2400	2640	2880	3120	3360	3600
73	1217	1460	1703	1947	2190	2433	2677	2920	3163	3407	3650
74	1233	1480	1727	1973	2220	2467	2713	2960	3207	3453	3700
75	1250	1500	1750	2000	2250	2500	2750	3000	3250	3500	3750
76	1267	1520	1773	2027	2280	2533	2787	3040	3293	3547	3800
77	1283	1540	1797	2053	2310	2567	2823	3080	3337	3593	3850
78	1300	1560	1820	2080	2340	2600	2860	3120	3380	3640	3900
79	1317	1580	1843	2107	2370	2633	2897	3160	3423	3687	3950
80	1333	1600	1867	2133	2400	2667	2933	3200	3467	3733	4000
81	1350	1620	1890	2160	2430	2700	2970	3240	3510	3780	4050
82	1367	1640	1913	2187	2460	2733	3007	3280	3553	3827	4100
83	1383	1660	1937	2213	2490	2767	3043	3320	3597	3873	4150
84	1400	1680	1960	2240	2520	2800	3080	3360	3640	3920	4200
85	1417	1700	1983	2267	2550	2833	3117	3400	3683	3967	4250
86	1433	1720	2007	2293	2580	2867	3153	3440	3727	4013	4300
87	1450	1740	2030	2320	2610	2900	3190	3480	3770	4060	4350
88	1467	1760	2053	2347	2640	2933	3227	3520	3813	4107	4400
89	1483	1780	2077	2373	2670	2967	3263	3560	3857	4153	4450
90	1500	1800	2100	2400	2700	3000	3300	3600	3900	4200	4500
91	1517	1820	2123	2427	2730	3033	3337	3640	3943	4247	4550
92	1533	1840	2147	2453	2760	3067	3373	3680	3987	4293	4600
93	1550	1860	2170	2480	2790	3100	3410	3720	4030	4340	4650
94	1567	1880	2193	2507	2820	3133	3447	3760	4073	4387	4700
95	1583	1900	2217	2533	2850	3167	3483	3800	4117	4433	4750
96	1600	1920	2240	2560	2880	3200	3520	3840	4160	4480	4800
97	1617	1940	2263	2587	2910	3233	3557	3880	4203	4527	4850
98	1633	1960	2287	2613	2940	3267	3593	3920	4247	4573	4900
99	1650	1980	2310	2640	2970	3300	3630	3960	4290	4620	4950
100	1667	2000	2333	2667	3000	3333	3667	4000	4333	4667	5000
700	11667	14000	16333	18667	21000	23333	25667	28000	30333	32667	35000
800	13333	16000	18667	21333	24000	26667	29333	32000	34667	37333	40000
900	15000	18000	21000	24000	27000	30000	33000	36000	39000	42000	45000
1000	16666 $\frac{2}{3}$	20000	23333 $\frac{1}{3}$	26666 $\frac{2}{3}$	30000	33333 $\frac{1}{3}$	36666 $\frac{2}{3}$	40000	43333 $\frac{1}{3}$	46666 $\frac{2}{3}$	50000

4 x 4. 16 in.

	10	12	14	16	18	20	22	24	26	28	30
1	13 $\frac{1}{4}$	16	18 $\frac{1}{2}$	21 $\frac{1}{4}$	24	26 $\frac{1}{2}$	29 $\frac{1}{2}$	32	34 $\frac{1}{2}$	37 $\frac{1}{2}$	40
2	27	32	37	43	48	53	59	64	69	75	80
3	40	48	56	64	72	80	88	96	104	112	120
4	53	64	75	85	96	107	117	128	139	149	160
5	67	80	93	107	120	133	147	160	173	187	200
6	80	96	112	128	144	160	176	192	208	224	240
7	93	112	131	149	168	187	205	224	243	261	280
8	107	128	149	171	192	213	235	256	277	299	320
9	120	144	168	192	216	240	264	288	312	336	360
10	133	160	187	213	240	267	293	320	347	373	400
11	147	176	205	235	264	293	323	352	381	411	440
12	160	192	224	256	288	320	352	384	416	448	480
13	173	208	243	277	312	347	381	416	451	485	520
14	187	224	261	299	336	373	411	448	485	523	560
15	200	240	280	320	360	400	440	480	520	560	600
16	213	256	299	341	384	427	469	512	555	597	640
17	227	272	317	363	408	453	499	544	589	635	680
18	240	288	336	384	432	480	528	576	624	672	720
19	253	304	355	405	456	507	557	608	659	709	760
20	267	320	373	427	480	533	587	640	693	747	800
21	280	336	392	448	504	560	616	672	728	784	840
22	293	352	411	469	528	587	645	704	763	821	880
23	307	368	429	491	552	613	675	736	797	859	920
24	320	384	448	512	576	640	704	768	832	896	960
25	333	400	467	533	600	667	733	800	867	933	1000
26	347	416	485	555	624	693	763	832	901	971	1040
27	360	432	504	576	648	720	792	864	936	1008	1080
28	373	448	523	597	672	747	821	896	971	1045	1120
29	387	464	541	619	696	773	851	928	1005	1083	1160
30	400	480	560	640	720	800	880	960	1040	1120	1200
31	413	496	579	661	744	827	909	992	1075	1157	1240
32	427	512	597	683	768	853	939	1024	1109	1195	1280
33	440	528	616	704	792	880	968	1056	1144	1232	1320
34	453	544	635	725	816	907	997	1088	1179	1269	1360
35	467	560	653	747	840	933	1027	1120	1213	1307	1400
36	480	576	672	768	864	960	1056	1152	1248	1344	1440
37	493	592	691	789	888	987	1085	1184	1283	1381	1480
38	507	608	709	811	912	1013	1115	1216	1317	1419	1520
39	520	624	728	832	936	1040	1144	1248	1352	1456	1560
40	533	640	747	853	960	1067	1173	1280	1387	1493	1600
41	547	656	765	875	984	1093	1203	1312	1421	1531	1640
42	560	672	784	896	1008	1120	1232	1344	1456	1568	1680
43	573	688	803	917	1032	1147	1261	1376	1491	1605	1720
44	587	704	821	939	1056	1173	1291	1408	1525	1643	1760
45	600	720	840	960	1080	1200	1320	1440	1560	1680	1800
46	613	736	859	981	1104	1227	1349	1472	1595	1717	1840
47	627	752	877	1003	1128	1253	1379	1504	1629	1755	1880
48	640	768	896	1024	1152	1280	1408	1536	1664	1792	1920
49	653	784	915	1045	1176	1307	1437	1568	1699	1829	1960
50	667	800	933	1067	1200	1333	1467	1600	1733	1867	2000
200	2667	3200	3733	4267	4800	5333	5867	6400	6933	7467	8000
300	4000	4800	5600	6400	7200	8000	8800	9600	10400	11200	12000
400	5333	6400	7467	8533	9600	10667	11733	12800	13867	14933	16000
500	6667	8000	9333	10667	12000	13333	14667	16000	17333	18667	20000
600	8000	9600	11200	12800	14400	16000	17600	19200	20800	22400	24000

4 x 4. 16 in.

2 x 8.

	10	12	14	16	18	20	22	24	26	28	30
51	680	816	952	1088	1224	1360	1496	1632	1768	1904	2040
52	693	832	971	1109	1248	1387	1525	1664	1803	1941	2080
53	707	848	989	1131	1272	1413	1555	1696	1837	1979	2120
54	720	864	1008	1152	1296	1440	1584	1728	1872	2016	2160
55	733	880	1027	1173	1320	1467	1613	1760	1907	2053	2200
56	747	896	1045	1195	1344	1493	1643	1792	1941	2091	2240
57	760	912	1064	1216	1368	1520	1672	1824	1976	2128	2280
58	773	928	1083	1237	1392	1547	1701	1856	2011	2165	2320
59	787	944	1101	1259	1416	1573	1731	1888	2045	2203	2360
60	800	960	1120	1280	1440	1600	1760	1920	2080	2240	2400
61	813	976	1139	1301	1464	1627	1789	1952	2115	2277	2440
62	827	992	1157	1323	1488	1653	1819	1984	2149	2315	2480
63	840	1008	1176	1344	1512	1680	1848	2016	2184	2352	2520
64	853	1024	1195	1365	1536	1707	1877	2048	2219	2389	2560
65	867	1040	1213	1387	1560	1733	1907	2080	2253	2427	2600
66	880	1056	1232	1408	1584	1760	1936	2112	2288	2464	2640
67	893	1072	1251	1429	1608	1787	1965	2144	2323	2501	2680
68	907	1088	1269	1451	1632	1813	1995	2176	2357	2539	2720
69	920	1104	1288	1472	1656	1840	2024	2208	2392	2576	2760
70	933	1120	1307	1493	1680	1867	2053	2240	2427	2613	2800
71	947	1136	1325	1515	1704	1893	2083	2272	2461	2651	2840
72	960	1152	1344	1536	1728	1920	2112	2304	2496	2688	2880
73	973	1168	1363	1557	1752	1947	2141	2336	2531	2725	2920
74	987	1184	1381	1579	1776	1973	2171	2368	2565	2763	2960
75	1000	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
76	1013	1216	1419	1621	1824	2027	2229	2432	2635	2837	3040
77	1027	1232	1437	1643	1848	2053	2259	2464	2669	2875	3080
78	1040	1248	1456	1664	1872	2080	2288	2496	2704	2912	3120
79	1053	1264	1475	1685	1896	2107	2317	2528	2739	2949	3160
80	1067	1280	1493	1707	1920	2133	2347	2560	2773	2987	3200
81	1080	1296	1512	1728	1944	2160	2376	2592	2808	3024	3240
82	1093	1312	1531	1749	1968	2187	2405	2624	2843	3061	3280
83	1107	1328	1549	1771	1992	2213	2435	2656	2877	3099	3320
84	1120	1344	1568	1792	2016	2240	2464	2688	2912	3136	3360
85	1133	1360	1587	1813	2040	2267	2493	2720	2947	3173	3400
86	1147	1376	1605	1835	2064	2293	2523	2752	2981	3211	3440
87	1160	1392	1624	1856	2088	2320	2552	2784	3016	3248	3480
88	1173	1408	1643	1877	2112	2347	2581	2816	3051	3285	3520
89	1187	1424	1661	1899	2136	2373	2611	2848	3085	3323	3560
90	1200	1440	1680	1920	2160	2400	2640	2880	3120	3360	3600
91	1213	1456	1699	1941	2184	2427	2669	2912	3155	3397	3640
92	1227	1472	1717	1963	2208	2453	2699	2944	3189	3435	3680
93	1240	1488	1736	1984	2232	2480	2728	2976	3224	3472	3720
94	1253	1504	1755	2005	2256	2507	2757	3008	3259	3509	3760
95	1267	1520	1773	2027	2280	2533	2787	3040	3293	3547	3800
96	1280	1536	1792	2048	2304	2560	2816	3072	3328	3584	3840
97	1293	1552	1811	2069	2328	2587	2845	3104	3363	3621	3880
98	1307	1568	1829	2091	2352	2613	2875	3136	3397	3659	3920
99	1320	1584	1848	2112	2376	2640	2904	3168	3432	3696	3960
100	1333	1600	1867	2133	2400	2667	2933	3200	3467	3733	4000
700	9333	11200	13067	14933	16800	18667	20533	22400	24267	26133	28000
800	10667	12800	14933	17067	19200	21333	23467	25600	27733	29867	32000
900	12000	14400	16800	19200	21600	24000	26400	28800	31200	33600	36000
1000	13333 $\frac{1}{3}$	16000	18666 $\frac{2}{3}$	21333 $\frac{1}{3}$	24000	26666 $\frac{2}{3}$	29333 $\frac{1}{3}$	32000	34666 $\frac{2}{3}$	37333 $\frac{1}{3}$	40000
2000	26667	32000	37333	42667	48000	53333	58667	64000	69333	74667	80000

3 x 4. 12 in.

	10	12	14	16	18	20	22	24	26	28	30
1	10	12	14	16	18	20	22	24	26	28	30
2	20	24	28	32	36	40	44	48	52	56	60
3	30	36	42	48	54	60	66	72	78	84	90
4	40	48	56	64	72	80	88	96	104	112	120
5	50	60	70	80	90	100	110	120	130	140	150
6	60	72	84	96	108	120	132	144	156	168	180
7	70	84	98	112	126	140	154	168	182	196	210
8	80	96	112	128	144	160	176	192	208	224	240
9	90	108	126	144	162	180	198	216	234	252	270
10	100	120	140	160	180	200	220	240	260	280	300
11	110	132	154	176	198	220	242	264	286	308	330
12	120	144	168	192	216	240	264	288	312	336	360
13	130	156	182	208	234	260	286	312	338	364	390
14	140	168	196	224	252	280	308	336	364	392	420
15	150	180	210	240	270	300	330	360	390	420	450
16	160	192	224	256	288	320	352	384	416	448	480
17	170	204	238	272	306	340	374	408	442	476	510
18	180	216	252	288	324	360	396	432	468	504	540
19	190	228	266	304	342	380	418	456	494	532	570
20	200	240	280	320	360	400	440	480	520	560	600
21	210	252	294	336	378	420	462	504	546	588	630
22	220	264	308	352	396	440	484	528	572	616	660
23	230	276	322	368	414	460	506	552	598	644	690
24	240	288	336	384	432	480	528	576	624	672	720
25	250	300	350	400	450	500	550	600	650	700	750
26	260	312	364	416	468	520	572	624	676	728	780
27	270	324	378	432	486	540	594	648	702	756	810
28	280	336	392	448	504	560	616	672	728	784	840
29	290	348	406	464	522	580	638	696	754	812	870
30	300	360	420	480	540	600	660	720	780	840	900
31	310	372	434	496	558	620	682	744	806	868	930
32	320	384	448	512	576	640	704	768	832	896	960
33	330	396	462	528	594	660	726	792	858	924	990
34	340	408	476	544	612	680	748	816	884	952	1020
35	350	420	490	560	630	700	770	840	910	980	1050
36	360	432	504	576	648	720	792	864	936	1008	1080
37	370	444	518	592	666	740	814	888	962	1036	1110
38	380	456	532	608	684	760	836	912	988	1064	1140
39	390	468	546	624	702	780	858	936	1014	1092	1170
40	400	480	560	640	720	800	880	960	1040	1120	1200
41	410	492	574	656	738	820	902	984	1066	1148	1230
42	420	504	588	672	756	840	924	1008	1092	1176	1260
43	430	516	602	688	774	860	946	1032	1118	1204	1290
44	440	528	616	704	792	880	968	1056	1144	1232	1320
45	450	540	630	720	810	900	990	1080	1170	1260	1350
46	460	552	644	736	828	920	1012	1104	1196	1288	1380
47	470	564	658	752	846	940	1034	1128	1222	1316	1410
48	480	576	672	768	864	960	1056	1152	1248	1344	1440
49	490	588	686	784	882	980	1078	1176	1274	1372	1470
50	500	600	700	800	900	1000	1100	1200	1300	1400	1500
200	2000	2400	2800	3200	3600	4000	4400	4800	5200	5600	6000
300	3000	3600	4200	4800	5400	6000	6600	7200	7800	8400	9000
400	4000	4800	5600	6400	7200	8000	8800	9600	10400	11200	12000
500	5000	6000	7000	8000	9000	10000	11000	12000	13000	14000	15000
600	6000	7200	8400	9600	10800	12000	13200	14400	15600	16800	18000

	10	12	14	16	18	20	22	24	26	28	30
51	510	612	714	816	918	1020	1122	1224	1326	1428	1530
52	520	624	728	832	936	1040	1144	1248	1352	1456	1560
53	530	636	742	848	954	1060	1166	1272	1378	1484	1590
54	540	648	756	864	972	1080	1188	1296	1404	1512	1620
55	550	660	770	880	990	1100	1210	1320	1430	1540	1650
56	560	672	784	896	1008	1120	1232	1344	1456	1568	1680
57	570	684	798	912	1026	1140	1254	1368	1482	1596	1710
58	580	696	812	928	1044	1160	1276	1392	1508	1624	1740
59	590	708	826	944	1062	1180	1298	1416	1534	1652	1770
60	600	720	840	960	1080	1200	1320	1440	1560	1680	1800
61	610	732	854	976	1098	1220	1342	1464	1586	1708	1830
62	620	744	868	992	1116	1240	1364	1488	1612	1736	1860
63	630	756	882	1008	1134	1260	1386	1512	1638	1764	1890
64	640	768	896	1024	1152	1280	1408	1536	1664	1792	1920
65	650	780	910	1040	1170	1300	1430	1560	1690	1820	1950
66	660	792	924	1056	1188	1320	1452	1584	1716	1848	1980
67	670	804	938	1072	1206	1340	1474	1608	1742	1876	2010
68	680	816	952	1088	1224	1360	1496	1632	1768	1904	2040
69	690	828	966	1104	1242	1380	1518	1656	1794	1932	2070
70	700	840	980	1120	1260	1400	1540	1680	1820	1960	2100
71	710	852	994	1136	1278	1420	1562	1704	1846	1988	2130
72	720	864	1008	1152	1296	1440	1584	1728	1872	2016	2160
73	730	876	1022	1168	1314	1460	1606	1752	1898	2044	2190
74	740	888	1036	1184	1332	1480	1628	1776	1924	2072	2220
75	750	900	1050	1200	1350	1500	1650	1800	1950	2100	2250
76	760	912	1064	1216	1368	1520	1672	1824	1976	2128	2280
77	770	924	1078	1232	1386	1540	1694	1848	2002	2156	2310
78	780	936	1092	1248	1404	1560	1716	1872	2028	2184	2340
79	790	948	1106	1264	1422	1580	1738	1896	2054	2212	2370
80	800	960	1120	1280	1440	1600	1760	1920	2080	2240	2400
81	810	972	1134	1296	1458	1620	1782	1944	2106	2268	2430
82	820	984	1148	1312	1476	1640	1804	1968	2132	2296	2460
83	830	996	1162	1328	1494	1660	1826	1992	2158	2324	2490
84	840	1008	1176	1344	1512	1680	1848	2016	2184	2352	2520
85	850	1020	1190	1360	1530	1700	1870	2040	2210	2380	2550
86	860	1032	1204	1376	1548	1720	1892	2064	2236	2408	2580
87	870	1044	1218	1392	1566	1740	1914	2088	2262	2436	2610
88	880	1056	1232	1408	1584	1760	1936	2112	2288	2464	2640
89	890	1068	1246	1424	1602	1780	1958	2136	2314	2492	2670
90	900	1080	1260	1440	1620	1800	1980	2160	2340	2520	2700
91	910	1092	1274	1456	1638	1820	2002	2184	2366	2548	2730
92	920	1104	1288	1472	1656	1840	2024	2208	2392	2576	2760
93	930	1116	1302	1488	1674	1860	2046	2232	2418	2604	2790
94	940	1128	1316	1504	1692	1880	2068	2256	2444	2632	2820
95	950	1140	1330	1520	1710	1900	2090	2280	2470	2660	2850
96	960	1152	1344	1536	1728	1920	2112	2304	2496	2688	2880
97	970	1164	1358	1552	1746	1940	2134	2328	2522	2716	2910
98	980	1176	1372	1568	1764	1960	2156	2352	2548	2744	2940
99	990	1188	1386	1584	1782	1980	2178	2376	2574	2772	2970
100	1000	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
700	7000	8400	9800	11200	12600	14000	15400	16800	18200	19600	21000
800	8000	9600	11200	12800	14400	16000	17600	19200	20800	22400	24000
900	9000	10800	12600	14400	16200	18000	19800	21600	23400	25200	27000
1000	10000	12000	14000	16000	18000	20000	22000	24000	26000	28000	30000

	10	12	14	16	18	20	22	24	26	28	30
1	6 $\frac{3}{4}$	8	9 $\frac{1}{4}$	10 $\frac{3}{4}$	12	13 $\frac{1}{4}$	14 $\frac{3}{4}$	16	17 $\frac{1}{4}$	18 $\frac{3}{4}$	20
2	13	16	19	21	24	27	29	32	35	37	40
3	20	24	28	32	36	40	44	48	52	56	60
4	27	32	37	43	48	53	59	64	69	75	80
5	33	40	47	53	60	67	73	80	87	93	100
6	40	48	56	64	72	80	88	96	104	112	120
7	47	56	65	75	84	93	103	112	121	131	140
8	53	64	75	85	96	107	117	128	139	149	160
9	60	72	84	96	108	120	132	144	156	168	180
10	67	80	93	107	120	133	147	160	173	187	200
11	73	88	103	117	132	147	161	176	191	205	220
12	80	96	112	128	144	160	176	192	208	224	240
13	87	104	121	139	156	173	191	208	225	243	260
14	93	112	131	149	168	187	205	224	243	261	280
15	100	120	140	160	180	200	220	240	260	280	300
16	107	128	149	171	192	213	235	256	277	299	320
17	113	136	159	181	204	227	249	272	295	317	340
18	120	144	168	192	216	240	264	288	312	336	360
19	127	152	177	203	228	253	279	304	329	355	380
20	133	160	187	213	240	267	293	320	347	373	400
21	140	168	196	224	252	280	308	336	364	392	420
22	147	176	205	235	264	293	323	352	381	411	440
23	153	184	215	245	276	307	337	368	399	429	460
24	160	192	224	256	288	320	352	384	416	448	480
25	167	200	233	267	300	333	367	400	433	467	500
26	173	208	243	277	312	347	381	416	451	485	520
27	180	216	252	288	324	360	396	432	468	504	540
28	187	224	261	299	336	373	411	448	485	523	560
29	193	232	271	309	348	387	425	464	503	541	580
30	200	240	280	320	360	400	440	480	520	560	600
31	207	248	289	331	372	413	455	496	537	579	620
32	213	256	299	341	384	427	469	512	555	597	640
33	220	264	308	352	396	440	484	528	572	616	660
34	227	272	317	363	408	453	499	544	589	635	680
35	233	280	327	373	420	467	513	560	607	653	700
36	240	288	336	384	432	480	528	576	624	672	720
37	247	296	345	395	444	493	543	592	641	691	740
38	253	304	355	405	456	507	557	608	659	709	760
39	260	312	364	416	468	520	572	624	676	728	780
40	267	320	373	427	480	533	587	640	693	747	800
41	273	328	383	437	492	547	601	656	711	765	820
42	280	336	392	448	504	560	616	672	728	784	840
43	287	344	401	459	516	573	631	688	745	803	860
44	293	352	411	469	528	587	645	704	763	821	880
45	300	360	420	480	540	600	660	720	780	840	900
46	307	368	429	491	552	613	675	736	797	859	920
47	313	376	439	501	564	627	689	752	815	877	940
48	320	384	448	512	576	640	704	768	832	896	960
49	327	392	457	523	588	653	719	784	849	915	980
50	333	400	467	533	600	667	733	800	867	933	1000
200	1333	1600	1867	2133	2400	2667	2933	3200	3467	3733	4000
300	2000	2400	2800	3200	3600	4000	4400	4800	5200	5600	6000
400	2667	3200	3733	4267	4800	5333	5867	6400	6933	7467	8000
500	3333	4000	4667	5333	6000	6667	7333	8000	8667	9333	10000
600	4000	4800	5600	6400	7200	8000	8800	9600	10400	11200	12000

8 in.

	10	12	14	16	18	20	22	24	26	28	30
51	340	408	476	544	612	680	748	816	884	952	1020
52	347	416	485	555	624	693	763	832	901	971	1040
53	353	424	495	565	636	707	777	848	919	989	1060
54	360	432	504	576	648	720	792	864	936	1008	1080
55	367	440	513	587	660	733	807	880	953	1027	1100
56	373	448	523	597	672	747	821	896	971	1045	1120
57	380	456	532	608	684	760	836	912	988	1064	1140
58	387	464	541	619	696	773	851	928	1005	1083	1160
59	393	472	551	629	708	787	865	944	1023	1101	1180
60	400	480	560	640	720	800	880	960	1040	1120	1200
61	407	488	569	651	732	813	895	976	1057	1139	1220
62	413	496	579	661	744	827	909	992	1075	1157	1240
63	420	504	588	672	756	840	924	1008	1092	1176	1260
64	427	512	597	683	768	853	939	1024	1109	1195	1280
65	433	520	607	693	780	867	953	1040	1127	1213	1300
66	440	528	616	704	792	880	968	1056	1144	1232	1320
67	447	536	625	715	804	893	983	1072	1161	1251	1340
68	453	544	635	725	816	907	997	1088	1179	1269	1360
69	460	552	644	736	828	920	1012	1104	1196	1288	1380
70	467	560	653	747	840	933	1027	1120	1213	1307	1400
71	473	568	663	757	852	947	1041	1136	1231	1325	1420
72	480	576	672	768	864	960	1056	1152	1248	1344	1440
73	487	584	681	779	876	973	1071	1168	1265	1363	1460
74	493	592	691	789	888	987	1085	1184	1283	1381	1480
75	500	600	700	800	900	1000	1100	1200	1300	1400	1500
76	507	608	709	811	912	1013	1115	1216	1317	1419	1520
77	513	616	719	821	924	1027	1129	1232	1335	1437	1540
78	520	624	728	832	936	1040	1144	1248	1352	1456	1560
79	527	632	737	843	948	1053	1159	1264	1369	1475	1580
80	533	640	747	853	960	1067	1173	1280	1387	1493	1600
81	540	648	756	864	972	1080	1188	1296	1404	1512	1620
82	547	656	765	875	984	1093	1203	1312	1421	1531	1640
83	553	664	775	885	996	1107	1217	1328	1439	1549	1660
84	560	672	784	896	1008	1120	1232	1344	1456	1568	1680
85	567	680	793	907	1020	1133	1247	1360	1473	1587	1700
86	573	688	803	917	1032	1147	1261	1376	1491	1605	1720
87	580	696	812	928	1044	1160	1276	1392	1508	1624	1740
88	587	704	821	939	1056	1173	1291	1408	1525	1643	1760
89	593	712	831	949	1068	1187	1305	1424	1543	1661	1780
90	600	720	840	960	1080	1200	1320	1440	1560	1680	1800
91	607	728	849	971	1092	1213	1335	1456	1577	1699	1820
92	613	736	859	981	1104	1227	1349	1472	1595	1717	1840
93	620	744	868	992	1116	1240	1364	1488	1612	1736	1860
94	627	752	877	1003	1128	1253	1379	1504	1629	1755	1880
95	633	760	887	1013	1140	1267	1393	1520	1647	1773	1900
96	640	768	896	1024	1152	1280	1408	1536	1664	1792	1920
97	647	776	905	1035	1164	1293	1423	1552	1681	1811	1940
98	653	784	915	1045	1176	1307	1437	1568	1699	1829	1960
99	660	792	924	1056	1188	1320	1452	1584	1716	1848	1980
100	667	800	933	1067	1200	1333	1467	1600	1733	1867	2000
700	4667	5600	6533	7467	8400	9333	10267	11200	12133	13067	14000
800	5333	6400	7467	8533	9600	10667	11733	12800	13867	14933	16000
900	6000	7200	8400	9600	10800	12000	13200	14400	15600	16800	18000
1000	6666½	8000	9333½	10666½	12000	13333½	14666½	16000	17333½	18666½	20000
2000	13333	16000	18667	21333	24000	26667	29333	32000	34667	37333	40000

SUGGESTIONS.

The red figures all represent number of pieces except for 1", 1¼" and 1½", which are in inches and half inches in width.

The green figures all represent lengths.

The black figures all represent totals.

The large figures and fractions represent feet, small figures, inches.

Totals in the final 500 or 1000 pieces or inches are exact for computation of a greater number of pieces or inches.

To find amount in feet when number of pieces is given, find the number of pieces in left hand red column and then follow across to the right until you come under the length in green, the corner will show totals. If amount is given in feet, find the amount under the proper length in green and follow to the left margin and you will find the number of pieces required to make the amount in feet.

One (') means foot; two (") means inches.

Totals in piece stuff figured actual measurement, over 6" in result counts 1', under 6" counts 0.

Totals in 1", 1¼" and 1½" results figured in half inches, the result giving feet and whole inches up to 20" in width, above 20" in width over 6" in result counts 1', under 6" count 0.

1", 1¼" and 1½" is in widths in inches and halves by any ordinary tape or carpenter's measure.

Any total size in inches which is a multiple or divisor of any other total size in inches gives for result a divisor or multiplier for same number and length of pieces.

Half the size and twice the length is same as twice the size and half the length or vice versa.

For 4' lengths take ⅓ of 12', for 5', 6', 7', 8', 9', 11' or 13' odd lengths Eastern Market, take half of 10', 12', 14', 16', 18', 22' or 26', and so on up. Same for Western Market. For 1x6, 24' take 2x6, 12'; for 2x4, 48' take 2x8, 24'.

For 1¼" stock widths, add ¼" to 1" stock widths.

" 1½" " " " ½ to 1" " "

" 2½" " " " ¼ to 2" " "

" 3" " " " ½ to 2" " "

" 2" miscellaneous, take twice 1" miscellaneous.

" 2½" " " " 1¼" " "

" 3" " " " 1½" " "

To obtain correct measurement and equivalent price on ½" made from 1¼", add to 1¼" measurement three-fifths for result in feet, deduct from 1¼" price, three-eighths for price of ½" per M.

To obtain same results on ⅝" made from 1½", add to 1½" measurement one-third. Deduct from 1½" price one-fourth.

To obtain same results for ⅔" made from 1", take twice the number of feet of 1", half the price of 1".

To the above must be added the cost of milling.

⅓" x 3" Batts, lineal, equal 8 to 1, board measure even widths, same lengths.

2" O. G. " " " 6 to 1, " " " " " "

2¼" " " " 5½ to 1, " " " " " "

2½" " " " 4½ to 1, " " " " " "

3" " " " 4 to 1, " " " " " "

4 bunches of shingles make 1000 shingles.

20 " lath " 1000 lath.

9 thousand 16" shingles equal 1000' of lumber.

8 " 18" " 1000' "

4 " lath " 1000' "

50 bundles of either square or flat pickets make 1000 pickets.

1½ thousand square pickets equal 1000' of lumber.

1 thousand flat " " 1000' "

2000' ½" siding " 1000' "

EQUATION OF SIZES.

FOR	TAKE	FOR	TAKE	FOR	TAKE
1x 1— $\frac{1}{4}$ of	1x4	4x 4—Same	2x8	8x 8—Page	17
1x 2— $\frac{1}{2}$ of	1x4	4x 5—Same	2x10	8x 9—Twice	6x6
1x 3— $\frac{1}{2}$ of	1x6	4x 6—Same	2x12	8x10—Page	18
1x 4—Page	22	4x 7—Same	2x14	8x12—Twice	6x8
1x 5— $\frac{1}{2}$ of	1x10	4x 8—Twice	2x8	8x14—4 times	2x14
1x 6—Page	23	4x 9—Same	6x6	8x16—Twice	8x8
1x 7— $\frac{1}{2}$ of	1x14	4x10—Twice	2x10	8x18—Same	12x12
1x 8—Same	2x4	4x12—Same	6x8	8x20—Twice	8x10
1x 9— $\frac{1}{4}$ of	6x6	4x14—Twice	2x14	8x22— $2\frac{1}{4}$ times	8x10
1x10—Page	24	4x16—Same	8x8	8x24—3 times	8x8
1x11— $\frac{1}{2}$ of	1x22	4x18—Twice	6x6	9x 9— $2\frac{1}{4}$ times	6x6
1x12—Same	2x6	4x20—Same	8x10	9x10—3 times	3x10
1x14—Page	25	4x22—4 times	1x22	9x12—3 times	6x6
1x16—Same	2x8	4x24—Twice	6x8	9x14—3 times	3x14
1x18— $\frac{1}{2}$ of	6x6	5x 5—Add $\frac{1}{4}$ to	2x10	9x16—Same	12x12
1x20—Same	2x10	5x 6—Same	3x10	9x18— $4\frac{1}{2}$ times	6x6
1x22—Page	26	5x 7—Add $\frac{1}{4}$ to	2x14	9x20—Add $\frac{1}{2}$ to	10x12
1x24—Same	2x12	5x 8—Twice	2x10	9x22— $5\frac{1}{2}$ times	6x6
2x 2—Same	1x4	5x 9—Add $\frac{1}{2}$ to	3x10	9x24—Add $\frac{1}{2}$ to	12x12
2x 3—Same	1x6	5x10— $\frac{1}{2}$ of	10x10	10x10—Page	19
2x 4—Page	1 and 2	5x12— $\frac{1}{2}$ of	10x12	10x12—Page	20
2x 5—Same	1x10	5x14— $2\frac{1}{2}$ times	2x14	10x14— $3\frac{1}{3}$ times	3x14
2x 6—Page	3 and 4	5x16—Same	8x10	10x16—Twice	8x10
2x 7—Same	1x14	5x18—3 times	3x10	10x18—Add $\frac{1}{2}$ to	10x12
2x 8—Page	5 and 6	5x20—Same	10x10	10x20—Twice	10x10
2x 9— $\frac{1}{2}$ of	6x6	5x22—Add $\frac{1}{10}$ to	10x10	10x22—Add 10x10 to	10x12
2x10—Page	7 and 8	5x24—Same	10x12	10x24—Twice	10x12
2x11—Same	1x22	6x 6—Page	15	12x12—Page	21
2x12—Page	9 and 10	6x 7—Same	3x14	12x14—4 times	3x14
2x14—Page	11 and 12	6x 8—Page	16	12x16—3 times	8x8
2x16—Twice	2x8	6x 9—Add $\frac{1}{2}$ to	6x6	12x18—Add $\frac{1}{2}$ to	12x12
2x18—Same	6x6	6x10— $\frac{1}{2}$ of	10x12	12x20—Twice	10x12
2x20—Twice	2x10	6x12— $\frac{1}{2}$ of	12x12	12x22— $2\frac{1}{4}$ times	10x12
2x22—Twice	1x22	6x14—Twice	3x14	12x24—Twice	12x12
2x24—Same	6x8	6x16—Twice	6x8	14x14—Twice 8x10 to	6x6
3x 3—Add $\frac{1}{2}$ to	1x6	6x18—3 times	6x6	14x16— $3\frac{1}{2}$ times	8x8
3x 4—Same	2x6	6x20—Same	10x12	14x18— $2\frac{1}{10}$ times	10x12
3x 5—Add $\frac{1}{2}$ to	1x10	6x22—Add $\frac{1}{10}$ to	10x12	14x20— $2\frac{1}{3}$ times	10x12
3x 6— $\frac{1}{2}$ of	6x6	6x24—Same	12x12	14x22—Twice 12x12 to	2x10
3x 7— $\frac{1}{2}$ of	3x14	7x 7—Add $\frac{1}{6}$ to	3x14	14x24— $2\frac{1}{4}$ times	12x12
3x 8—Same	2x12	7x 8—Twice	2x14	16x16—4 times	8x8
3x 9— $\frac{1}{4}$ from	6x6	7x 9—Add $\frac{1}{2}$ to	3x14	16x18—Twice	12x12
3x10—Page	13	7x10— $2\frac{1}{3}$ times	3x10	16x20—4 times	8x10
3x12—Same	6x6	7x12—Twice	3x14	16x22—Twice 12x12 to	8x8
3x14—Page	14	7x14— $2\frac{1}{3}$ times	3x14	16x24—4 times 8x10 to	8x8
3x16—Same	6x8	7x16—4 times	2x14	18x18— $2\frac{1}{4}$ times	12x12
3x18—Add $\frac{1}{2}$ to	6x6	7x18—3 times	3x14	18x20—3 times	10x12
3x20—3 times	2x10	7x20— $3\frac{1}{3}$ times	3x14	18x22—3 times 10x12 to	6x6
3x22—3 times	1x22	7x22—Add 12x12 to	1x10	18x24—3 times	12x12
3x24—Add $\frac{1}{2}$ to	6x8	7x24— $3\frac{1}{2}$ times	6x8	20x20—4 times	10x10

The above will save more needed time

Than all the rules that you can buy,

Your work will run like runic rhyme

If this new book you'll only try.

20x22—3 times 12x12 to 2x4

20x24—4 times 10x12

22x22—4 times 10x12 to 1x4

22x24—4 times 10x12 to 6x8

WHITE PINE.

	WEIGHT
Shingles.....	225
Lath.....	400
32 inch Lath.....	300
$\frac{5}{8}$ Lath.....	900
Sheathing Lath.....	1500
$\frac{5}{8}$ Beaded Ceiling.....	1500
Finishing, S1S or S2S.....	2000
$\frac{1}{2}$ inch Battens.....	800
O. G. Battens.....	1600
Flat Pickets, D. & H.....	1400
Flat Pickets, rough.....	2200
Panel Lumber.....	1000
If specially dry all 10% less.	

WEIGHTS OF YELLOW PINE.

REVISED AT MEMPHIS FEBRUARY 22, 1894.

LBS.

SCHEDULE "B."

	LBS.
Flooring, $\frac{13}{16}$ in.	2300
Flooring, $\frac{13}{16}$ in. Hollow Backed	2100
Ceiling, $\frac{3}{8}$ in.	1000
Ceiling, $\frac{1}{2}$ in.	1300
Ceiling, $\frac{5}{8}$ in.	1600
Ceiling, $\frac{3}{4}$ in.	2000
Beveled Siding, from 1 in. stock	1000
Beveled Siding, from $1\frac{1}{4}$ in. stock	1500
Drop Siding, from $\frac{1}{2}$ in. stock	2300
Moulded Casings and Base	2300
Finishing, S2S	2800
Shiplap and D. & M.	2500
Grooved Roofing	2600
Common Boards and Fencing, S1S or 2S	2800
Common Boards and Fencing, rough	3200
2x4, 2x6 and 2x8, S1S and 1E, to $1\frac{5}{8}$	2600
2x4, 2x6 and 2x8, rough	3200
2x10 and 2x12, S1S and 1E, to $1\frac{5}{8}$	2800
2x10 and 2x12, rough	3400
4x4 and 4x6, S1S and 1E	3000
4x4 and 4x6, rough	3800
6x6, 6x8 and 8x8, S1S 1E	3600
6x6, 6x8 and 8x8, rough	4000
8x10 and over, rough	4000

For all 27 in. stock add 150 pounds to the weight shown for	19 in.
For all 23 in. stock add 100 pounds to the weight shown for	16 in.
	13 in.
	10 in.

[illegible]

RED CEDAR POSTS—Round.

DIAMETER	7 ft.	8 ft.	10 ft.	DIAMETER	7 ft.	8 ft.	10 ft.
3 in. top	23	25	30	6 in. top	59	84	93
4 " "	26	38	44	7 " "	68	105	113
5 " "	43	62	71	8 " "	125	130	145

Red Cedar Posts Split same as Split Oak.

RED CEDAR POLES PER LINEAL FOOT.

3, 4 and 5 in. tops, 12 to 18 feet, $\frac{1}{4}$ less than White Cedar.
 6 in. top, 12 to 18 feet, 20 lbs. per foot, lineal.
 7 in. top, 12 to 18 feet, 25 lbs. per foot, lineal.

COAST LUMBER AND SHINGLES.

	LBS.		LBS.
Fir Timbers, Joists and Scantlings:		Short Wainscoting	1600
2x4 to 2x12, up to 32 ft., rough ..	3000	$\frac{5}{8}$ Ceiling	1200
2x4 to 2x12, up to 32 ft., S1S or 2S.	2750	$\frac{3}{8}$ Ceiling and Siding	750
All other Lumber and Joists, rough	3300	Cedar.	
All other Lumber and Joists, S1S1E		Thick Finish	2000
or 4S	3000	Inch Finish	1800
Sel. dimensions S1S or 2S or D. & M.	3000	Casing Strips	1800
Thick Finish, S1S or 2S	2700	Inch Flooring	1600
Fencing, "	2700	Rustic Siding	1600
Box Boards, "	2600	$\frac{3}{4}$ Ceiling	1600
Inch Finish, "	2500	Short Wainscoting	1600
Stock Boards, "	2500	Porch Decking, 4 and 6 in	1600
Ship Lap or D. & M., S1S or 2S ..	2500	Base	1600
Thick Flooring	2200	Porch Decking, 3 in	1500
Inch Flooring	2000	Moulded Casing	1400
Rustic and Drop Siding	2000	$\frac{5}{8}$ Ceiling	1200
Beveled Well Tubing	2000	$\frac{3}{8}$ Ceiling and Sidings	700
Inch Ceiling, bevel or plain	2000	Pickets, 4 ft., 1200; 3 ft., 900; 2 $\frac{1}{2}$ ft.	750
$\frac{5}{8}$ Ceiling	1400	Batts	17
$\frac{3}{8}$ Ceiling and Siding	900	Porch Columns:	
Spruce.		4x4, 8 ft., 18; 9 ft., 20; 10 ft.	22
Thick Finish and Stepping S1 or 2S	2200	5x5, 8 ft., 28; 9 ft., 31; 10 ft.	35
Thick Flooring	2100	6x6, 8 ft., 42; 9 ft., 47; 10 ft.	53
Inch Flooring and Inch Finish	2000	Shingles, 6 to 2 in., 16 in.	160
Porch Decking	1600	Shingles, 5 to 2 in., 16 in.	180
$\frac{3}{4}$ Ceiling	1600	Shingles, 5 to 2 in., 18 in.	220

OAK LUMBER.

Green.....5500 per M. | Dry.....4500 per M.

OAK POSTS.

	LBS.		3 in.	4 in.	4 $\frac{1}{2}$ in.	5 in.	6 $\frac{1}{2}$ in.	6 in.
No. 2, split, 9 to 12 in., 6 $\frac{1}{2}$ ft.	20	7 ft. round.	40	50	65	80	100	120
No. 1, split, 12 to 15 in., 6 $\frac{1}{2}$ ft.	25	8 ft. round.	50	65	80	100	120	140
Extra, split, 15 to 18 in., 6 $\frac{1}{2}$ ft.	40	10 ft. round.	65	80	100	125	150	175
No. 1, split, 12 to 15 in., 8 ft.	40	12 ft. round.	80	100	120	155	180	225
Extra, split, 15 to 18 in., 8 ft.	60	14 ft. round.	100	120	150	180	225	275
No. 1, split, 12 to 15 in., 10 ft.	50							
Extra, split, 15 to 18 in., 10 ft.	75							
No. 1, split, 12 to 15 in., 12 ft.	90	Sawed, 2x4 by 4x4, 6 ft						28
Extra, split, 15 to 18 in., 12 ft.	100	Sawed, 2x5 by 5x5, 6 ft						35

OAK PILING.

8 in. top, 10 to 18 ft.	35 lbs. lin'l ft.	10 in. top, 10 to 18 ft.	50 lbs. lin'l ft.
8 in. top, 20 to 24 ft.	40 lbs. lin'l ft.	10 in. top, 20 to 24 ft.	50 lbs. lin'l ft.
8 in. top, 26 to 30 ft.	45 lbs. lin'l ft.	10 in. top, 26 to 30 ft.	60 lbs. lin'l ft.

R. R. WEIGHT, PILING.

10 in. top, 32 ft. and under .50 lbs. lin'l ft.
 10 in. top, 32 ft. not over 40 .55 lbs. lin'l ft.
 10 in. top, 40 ft. not over 50 .60 lbs. lin'l ft.
 10 in. top, 50 ft. and over .65 lbs. lin'l ft.

CYPRESS LUMBER & SHINGLES.

Green, 4250 per M. | Dry, 3000 per M.
 Finish Surfaced

